Annual Remediation Progress Report For the Jackson Salt Water Spill Site Alexander, North Dakota

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1.0 INTRODUCTION

Kleinfelder/Buys and Associates (KBA) was retained by Zenergy, Inc. to conduct remediation at the site of a produced water spill. The site is located in rural agricultural land near Alexander, McKenzie County, North Dakota in Section 33, Township 150 North, Range 102 West. Previous reports included results from site investigations conducted by KBA and water sampling conducted by others, the results of biological surveys conducted by KBA along Charbonneau Creek, a Remediation and Monitoring Plan for the site, a Groundwater Investigation Report, a Remediation Implementation Report, a Long Term Monitoring Plan, and previous Quarterly Monitoring Reports. This report provides the first Annual Remediation Progress Report and replaces the previous Quarterly Monitoring and Remediation Report for the third quarter 2010.

1.1 PREVIOUS INVESTIGATIONS

Previous investigations at the site show that water in Charbonneau Creek and a tributary ephemeral drainage (the upland drainage) were impacted by sodium, chloride, ammonia, and metals downstream of the spill site as a result of the spill of produced water. In addition, the hillside soils immediately below the spill point and the soils within the upland drainage were also impacted by the spill.

A total of 12 monitoring wells were installed at the site. Four monitoring wells were installed in sand and gravel layers within the upper portion of the ephemeral drainage (MW-1 through MW-4), two monitoring wells were installed along the lower portion of the ephemeral drainage below the stock pond (SD-1 and BP-3), and one monitoring well was installed between the Beaver Pond and Charbonneau Creek (MW-5). In addition to these wells, five monitoring wells were installed to evaluate the presence and hydrologic significance of coal layers beneath the site (wells MW-7 through MW-11). These wells constitute the previous groundwater monitoring network for the site.

Prior groundwater sampling events were conducted by KBA in September and November 2006; March, June, September, and November 2007; March, June, September, and November 2008; and April, June, September, and November 2009; April 2010, and September 2010. The findings from those sampling events were reported in the October 2006 Remediation Implementation Report, subsequent Quarterly Monitoring Reports, and this Annual Remediation Progress Report. The previous Quarterly Monitoring Reports also discussed extraction point sampling, surface water sampling on Charbonneau Creek, remediation efforts and progress, re-vegetation, and other site activities.

1.2 ANNUAL REMEDIATION PROGRESS REPORT

This Annual Remediation Progress Report presents field and laboratory analytical data for groundwater samples collected from the groundwater monitoring network on September 30, 2010 and compares the results to those from the previous sampling events. In addition to the groundwater sampling event, this report discusses the extraction system operation, and ongoing surface water sampling.

1.3 REVISED LONG-TERM MONITORING PLAN

A five-year review of the long-term monitoring program was conducted during this reporting period. Beginning with the Second Quarter 2011 sampling event, a reduced network of wells will

be sampled. Well MW-11 will be removed from the monitoring plan. Previous sampling results have shown that groundwater monitored by this well is not hydraulically connected to the upland drainage.

Five years of sampling of the background monitoring wells MW-7, MW-8, and MW-9 have fully characterized the background groundwater quality at the site. Well MW-7 has recently become impacted with elevated concentrations of several spill-related parameters, including arsenic, barium, chloride, calcium, magnesium, manganese, nickel, potassium, and sodium, as described in this Annual Remediation Progress Report. Therefore, monitoring of well MW-7 will continue three times per year. The other two background wells (MW-8 and MW-9) will be sampled once per year.

Monitoring of upper drainage wells MW-2, MW-3, and MW-4 has revealed that groundwater moves very slowly in this portion of the upland drainage. Therefore, sampling of these three wells will be reduced to once per year (one well will be sampled during each sampling event). The locations of these wells are shown on Figure 1, in Appendix A.

In addition, review of the chloride data collected on Charbonneau Creek show that many of the monitoring stations show similar data and can be eliminated from future monitoring. The revised surface water monitoring program will be implemented beginning in May 2011 and will include the following stations: Stock Pond, Beaver Pond, AC#7, and Station 3 (South Boundary). Samples will be collected every two weeks during the spring runoff period and monthly for the remainder of the year at these stations. The sampling frequency and number of monitoring stations will be increased if data show that high chloride levels are returning to Charbonneau Creek.

2.0 GROUNDWATER MONITORING

2.1 FIELD PROCEDURES

Twelve onsite monitoring wells were sampled by KBA on September 30, 2010. Prior to sampling, water levels were measured in each well on September 29, 2010 using an electronic water level indicator.

Each monitoring well was purged immediately prior to sampling by removing a minimum of three casing volumes of water, or bailing the well until dry. Wells MW-2, MW-3, MW-4, MW-7, MW-9, MW-11, and SD-1 were bailed dry at or prior to three casing volumes. These wells were allowed to recover prior to sampling for a period not exceeding three hours. Purging and sampling were conducted using a dedicated, new disposable polyethylene bailer for each well.

Samples were collected in appropriate polyethylene sample containers supplied by the laboratory and placed immediately on ice in a cooler. All samples were shipped to Environmental Science Corp. (ESC) of Mt. Juliet, TN via Fed-Ex for analysis of chloride, sulfate, ammonia, and selected cations and metals.

2.2 WATER LEVEL MEASUREMENTS

Water levels were measured in all site monitoring wells on September 29, 2010. The water level data are provided in Table 1 and displayed on Figure 2, in Appendix A.

Table 1 Water Level Elevations: September 29, 2010

Well ID	Elevation of Top of PVC Casing	Depth to Water	Groundwater Elevation
MW-1	2131.21	5.90	2125.31
MW-2	2134.51	5.16	2129.35
MW-3	2138.70	8.02	2130.68
MW-4	2146.84	10.46	2136.38
MW-5	2116.93	6.92	2110.01
MW-7	2122.79	10.79	2112.00
MW-8	2133.91	18.20	2115.71
MW-9	2122.06	6.92	2115.14
MW-10	2144.35	30.40	2113.95
MW-11	2143.27	37.50	2105.77
BP-3	2121.31	6.32	2114.99
SD-1	2131.93	12.57	2119.36

Groundwater levels increased by an average of 1.51 feet since the previous monitoring event conducted in June 2010.

2.3 FIELD CONDUCTIVITY, TEMPERATURE, AND pH MEASUREMENTS

Table 2 presents measurements of conductivity, temperature, and pH collected by KBA during sampling of the monitoring wells.

Table 2 Field Parameters Measured During Sampling: September 30, 2010

Well ID	pH (std units)	Specific Conductance (µS/cm)	Temperature (° C)
MW-1	6.70	74,500	13.7
MW-2	7.11	76,200	12.9
MW-3	6.46	122,300	12.3
MW-4	6.94	70,900	15.4
MW-5	7.26	7,060	13.2
MW-7	8.12	2,450	13.6
MW-8	7.99	2,760	10.5
MW-9	8.04	2,390	12.3
MW-10	7.05	11,410	11.1
MW-11	7.68	2,290	14.8
BP-3	6.53	83,200	14.0
SD-1	7.77	3,710	14.8

Table 3 provides a comparison of conductivity measurements recorded during the September 30, 2010 sampling event with those from the previous quarterly event.

Table 3 Comparison of Field Conductivity Measurements

	June 29, 2010	September 30, 2010	% Difference
MW-1	51,400	74,500	44.9%
MW-2	70,100	76,200	8.7%
MW-3	104,900	122,300	16.6%
MW-4	5,020	70,900	1312.4%
MW-5	4,770	7,060	48.0%
MW-7	1,820	2,450	34.6%
MW-8	1,520	2,760	81.6%
MW-9	2,330	2,390	2.6%
MW-10	15,200	11,410	-24.9%
MW-11	4,170	2,290	-45.1%
BP-3	83,400	83,200	-0.2%
SD-1	5,020	3,710	-26.1%

Comparison of the conductivity results for the two sampling events show that conductivity increased by an average of 121%. Increased conductivity was recorded in all wells except MW-10, MW-11, and SD-1 for this sampling event.

2.4 GROUNDWATER ANALYTICAL RESULTS

Analytical results for chloride, sulfate, and ammonia for the groundwater samples collected by KBA during this sampling event are presented in Table 4 and shown on Figure 3 in Appendix A. The laboratory data report is included in Appendix C. Table B-1 in Appendix B summarizes historical analytical results for chloride, sulfate, and ammonia for the monitoring wells at the site. In addition, annual sampling for metals was conducted during this period. The results are provided in table B-2 in Appendix B.

Chloride concentrations ranged from 25,000 to 40,000 mg/l in the upper drainage wells MW-1 through MW-4 (the result for MW-2 was rejected during data validation), and 47 to 34,000 mg/l in the lower drainage wells MW-5, MW-10, BP-3 and SD-1.

Ammonia concentrations ranged from 2.0 mg/l to 56 mg/l for the spill-affected wells, 0.24 mg/l to 9.8 mg/l for the coal seam wells, and <0.1 mg/l to 0.21 mg/l for the background wells, similar to the concentrations previously observed. Eleven wells sampled had sulfate concentrations exceeding the EPA secondary standard of 250 mg/l for this sampling event. The sulfate result for well MW-2 was rejected during data validation. However, as discussed in previous reports, the sulfate concentrations show no consistent pattern and are not attributable to the spill.

Table 4 Groundwater Analytical Results: September 30, 2010

Well ID	Date Sampled	ANIONS Chloride (mg/l)	Sulfate (mg/l)	Ammonia (mg/l)
MW-1	9/29/2010	**25000**	2,100	52
MW-2	9/29/2010	R	R	56
MW-3	9/29/2010	**40000**	1,500	24
MW-4	9/29/2010	**35000**	3,500	52
MW-5	9/29/2010	**2600**	2,100	2.0
MW-7	9/29/2010	16.0	1,100	<0.1
MW-8	9/29/2010	12.0	1,600	0.21
MW-9	9/29/2010	4.2	1,500	<0.1
MW-10	9/29/2010	**7400**	1,300	9.8
MW-11	9/29/2010	55	3,600	0.24
BP-3	9/29/2010	**34000**	1,200	14
SD-1	9/29/2010	47	2,000	3.0
MW-5 DUP	9/29/2010	**2400**	2,100	1.8

Note: Chloride concentrations in **bold font** exceed EPA Secondary Standards
R = Value rejected during data validation

Table 5 provides a comparison of the chloride concentrations in June 2010 and September 2010. Chloride increased in wells MW-4, MW-7, MW-8, MW-9, MW-10, MW-11, and BP-3 by an average of 149.7%. Most of this apparent increase was due to the increased chloride from 5,000 mg/l to 35,000 mg/l in lower drainage well MW-4, and the increased chloride seen in background well MW-7. Well MW-4 has shown large seasonal fluctuations in chloride concentrations for the past two years, reflecting an increased mobility of chloride ions liberated from the hillside soil by the application of gypsum. Three monitoring wells (MW-3, MW-5, and SD-1) exhibited

decreased chloride concentrations compared to the previous sampling event, with an average decrease of 51.4%.

Table 5 Comparison of Chloride Results Between June and September 2010

Well ID	June 29, 2010	September 30, 2010	Percent Increase	Percent Decrease
MW-1	25,000	25,000	0%	
MW-2	19,000	R	NA	
MW-3	42,000	40,000		-4.8%
MW-4	5,000	35,000	600.0%	
MW-5	5,500	2,600		-52.7%
MW-7	4.0	16.0	300.0%	
MW-8	9.3	12.0	29.0%	
MW-9	2.2	4.2	90.9%	
MW-10	7,200	7,400	2.8%	
MW-11	53	55	3.8%	
BP-3	28,000	34,000	21.4%	
SD-1	1,400	47		-96.6%
Average Percent Increase or Decrease			**149.7%**	**-51.4%**

R = Value rejected
NA = Not applicable

Table 6 presents the initial chloride concentration for each spill-affected monitoring well, the most recent chloride concentration for each well, and the percent difference between them. The average decrease since the initial groundwater sampling event for each well showing decreased chloride concentrations is now 47.9%. The reductions in chloride concentrations for impacted wells range from 5.6% for well MW-10 to 99.8% for well SD-1. Well MW-10 monitors impacted water in a coal seam that continues to receive much of the groundwater flow from the upland drainage, thus the reduction of chloride in this well has been very slow.

Table 6 Reduction of Chloride in Groundwater Since Initial Sampling Event

Well ID	Initial Sampling Date	Initial Chloride Concentration (mg/l)	June 29, 2010 (mg/l)	% Difference
MW-1	9/8/2006	111,000	25,000	-77.5%
MW-2	9/8/2006	128,000	R	NA
MW-3	9/8/2006	66,000	40,000	-39.4%
MW-4	11/8/2006	38,100	35,000	-8.1%
MW-5	9/8/2006	8,200	2,600	-68.3%
MW-10	9/8/2006	7,840	7,400	-5.6%
MW-11	9/8/2006	65	55	-15.4%
BP-3	5/25/2006	111,000	34,000	-69.4%
SD-1	5/25/2006	19,500	47	-99.8%

R = Value rejected during data validation
NA = Not applicable

As discussed in previous reports, the groundwater samples can be grouped into three subsets:

1) Samples from wells that are representative of background conditions (wells MW-7, MW-8, and MW-9),
2) Samples from wells known to be affected by the spill (wells MW-1, MW-2, MW-3, MW-4, MW-5, BP-3 and SD-1), and
3) Wells where coal seams are present (wells MW-10 and MW-11).

Analytical results for well MW-11 have consistently shown water chemistry that is different than the water from the other wells on site. In addition, the groundwater level measured in this well is below that measured in the adjacent upland drainage impacted by the spill. These results demonstrate that the groundwater monitored by this well is not hydraulically connected to the upland drainage groundwater. Therefore, as discussed in Section 1.3 above, monitoring of MW-11 will be discontinued beginning with the May 2011 sampling event. In addition, the sampling frequency will be reduced for the background wells and upper drainage wells.

2.4.1 BACKGROUND GROUNDWATER CHEMISTRY

Groundwater samples from wells MW-7, MW-8, and MW-9 are representative of background conditions. Chloride concentrations on June 29, 2010 were 16.0 and 4.2 mg/l in wells MW-7 and MW-9, (on the north side of the Beaver Pond), and 12.0 mg/l in MW-8 (on the south side of the Beaver Pond), similar to previous results. The low levels of chloride detected in these wells indicate that the adjacent areas north and south of the Beaver Pond that are not influenced by the presence of coal seams have not been impacted by the spill.

The monitoring program for the background wells will be reduced beginning with the May 2011 sampling event. Well MW-7 has recently become impacted with elevated concentrations of several spill-related parameters, including arsenic, barium, chloride, calcium, magnesium, manganese, nickel, potassium, and sodium. Therefore, monitoring of this well will continue three times per year to evaluate the trend of water quality in this well. Under the revised monitoring program, the two remaining background wells (MW-8 and MW-9) will be sampled once per year.

2.4.2 SPILL-IMPACTED WATER CHEMISTRY

For the seven wells screened in areas that have clearly been impacted by the spill, the water chemistry is dramatically different and shows elevated concentrations of chloride and ammonia, as well as higher conductivity and lower pH. Sodium and several other metals and cations, including calcium, magnesium, manganese, nickel, and potassium, are also elevated in these wells as compared to the background wells, as previously documented in the November 2006, September 2007, September 2008, and September 2009 sampling events.

Chloride concentrations for the impacted wells in the upper drainage (MW-1 through MW-4) ranged from 25,000 mg/l in MW-4 to 40,000 mg/l in well MW-3. Chloride concentrations remained stable in wells MW-1 and MW-3 since the previous monitoring event, but increased from 5,000 mg/l to 35,000 mg/l in well MW-4 (the chloride result for MW-2 was rejected during data validation). This result is consistent with the continued liberation of chloride ions from the hillside soils as described in Section 5.0 of this report.

Chloride concentrations in monitoring well MW-5 decreased from 5,500 mg/l in June 2010 to 2,600 mg/l for this sampling event. The decreased chloride concentration in well MW-5 was accompanied by a decrease of chloride concentrations in the Beaver Pond surface water.

Chloride in well BP-3 increased from 28,000 mg/l in June 2010 to 34,000 mg/l for this sampling event, similar to the fluctuations in chloride seen in this well over time. The chloride concentration in well SD-1 decreased from 1,400 mg/l in June 2010 to an all-time low of 47 mg/l for this event, reflecting the contribution of clean surface water from the stock pond to this well.

2.4.3 WELLS WHERE COAL IS PRESENT

Wells MW-10 and MW-11 were drilled outside of the upland drainage channel and encountered coal seams. The chloride concentration in well MW-10, located south of the Beaver Pond, was 7,400 mg/l for this sampling event, up slightly from the previous concentration of 7,200 mg/l in June 2010 but lower than the concentration of 16,000 mg/l recorded in April 2009. This well monitors a coal seam that transfers large quantities of spill-affected groundwater down the drainage.

Chloride in well MW-11 was 55 mg/l for this sampling event, similar to previous events. As discussed above, previous results demonstrate that the groundwater monitored by this well is not hydraulically connected to the upland drainage groundwater. Therefore, monitoring of this well will be discontinued beginning with the May 2011 sampling event.

2.5 GROUNDWATER MONITORING DISCUSSION

All wells screened within the alluvial sand and gravel layers in the upland drainage (wells MW-1, MW-2, MW-3, MW-4, SD-1, and BP-3), coal seam well MW-10, and well MW-5, located between the Beaver Pond and Charbonneau Creek, remain impacted by the spill. Chloride concentrations have decreased in all spill-affected wells since monitoring began in 2006 by an average of 32.3%.

Well MW-7 has recently become impacted with elevated concentrations of several spill-related parameters, including arsenic, barium, chloride, calcium, magnesium, manganese, nickel, potassium, and sodium. The remaining background water wells (MW-8 and MW-9) remain non-impacted and have concentrations of chloride that are orders of magnitude less than those in the spill-impacted groundwater. Chloride concentrations have changed little in these wells since monitoring began.

3.0 GROUNDWATER EXTRACTION SYSTEM

3.1 SYSTEM DESCRIPTION

During the summer of 2006, KBA supervised the installation of an extraction system designed to intercept and remove groundwater flowing beneath the upland drainage in alluvial sand and gravel layers and in discontinuous coal seams. The extraction system consists of six extraction points which pump groundwater from the drainage to the nearby Jackson well tank battery for disposal into the Wolf salt water disposal (SWD) well, as discussed in previous monitoring reports. Figure 4 in Appendix A shows the locations of the extraction points and piping network.

3.2 SYSTEM OPERATION

Operational field data has been recorded on a daily basis since start up. The data is collected by Zenergy personnel, who also perform operation and maintenance. Operational data such as flow meter readings and operational hours are recorded utilizing hand held personal data assistants (PDA) and then uploaded to Zenergy's production database using Field Direct Production Explorer.

Table 7 summarizes the volumes of groundwater removed from each extraction point since the last monitoring report through December 31, 2010 and since system inception.

Table 7 Extraction System Recovery Summary

Extraction Point	Start-up Date	Total Water Removed (gallons)	Water Removed Since Last Report (gallons)	Average Daily Flow This Period (bbl/day)
EP-01	8/17/2006	1,844,356	188,992	32.8
EP-02	8/11/2006	6,073,535	525,620	91.3
EP-03	8/11/2006	255,089	12,479	2.2
EP-04	8/11/2006	5,011,776	15,109	2.6
EP-05	8/11/2006	2,258,683	1,136,343	197.5
EP-06	9/9/2006	15,408,459	811,510	141.0
System Total		**30,851,897**	**2,690,052**	**467.5**

Extraction point EP-06 has run nearly constantly since start-up due to the high flow from the coal seam (monitored in well MW-10) which it captures. Other extraction points run intermittently, either activated by the in-sump floats or controlled by timers on the control panels. Following start-up, extraction point EP-03 was only productive for short time periods during the 2007 and 2009 spring run-off events. EP-03 once again became productive during early 2010.

Extraction system flow data are shown on Figure 4 in Appendix A. Charts 1 through 5, in Appendix B, show cumulative flow from the extraction points, except for EP-03, which has historically had only brief periods of flow.

Pumping of water from the Beaver Pond into Charbonneau Creek was discontinued in November 2009. During the spring of 2010, the water level in the Beaver Pond increased and led to infiltration of the EP-06 extraction sump by Beaver Pond water. This caused the chloride

concentration in EP-06 to drop due to dilution from the Beaver Pond water. In addition, the pumping rate in EP-06 was not sufficient to keep the Beaver Pond from discharging into Charbonneau Creek. In order to increase the rate of pumping, an additional pump was installed in EP-06 and the outlet was piped to EP-05 for pumping to the Wolf injection well. As a result, the average pumping rate in EP-05 has increased from 9.9 bbl/day in 2009 to 197.5 bbl/day for this reporting period.

The quantity of water pumped into EP-05 was higher than the flow rate out of the sump; therefore, a seep appeared in the lower drainage near the EP-05 extraction trench. This seep was sampled for chloride on June 16 and June 17, 2010 and the results were 1,121 mg/l and 1,141 mg/l, respectively, slightly higher than the results for the Beaver Pond on those two days.

The cessation of pumping has allowed the Beaver Pond to refill and to overflow into Charbonneau Creek. Discharge from the Beaver Pond is curtailed when chloride concentrations reach 1,000 mg/l. Refilling of the Beaver Pond appears to have had a beneficial effect on chloride concentrations in Charbonneau Creek, as discussed in Section 4.0.

3.3 ROUTINE EXTRACTION POINT SAMPLING

Periodic sampling of extraction points is conducted by Astro-Chem Laboratories of Williston, North Dakota for chloride, sulfate, conductivity, and pH. Historicially, monthly samples have been typically collected on the first Tuesday of each month, except for EP-06 which was sampled twice monthly. Samples are collected at each extraction point from self-draining yard-hydrant sample ports by opening the hydrant, letting the water flush briefly, and then collecting a grab sample in an appropriate laboratory container. Beginning in May 2011, sampling of the extraction points will be reduced to quarterly.

Chloride concentrations have decreased dramatically in all extraction points since start-up of the pumps. Table 8 and Figure 5 compare the initial chloride concentration to the most recent analytical data. The reduction of chloride concentrations ranges from 69% in EP-05 to 98% in EP-02. Charts 1 through 5 in Appendix B document the chloride concentrations over time for all extraction points except EP-03. Chart 6 compares the chloride concentrations in all extraction points except EP-03.

Table 8 Extraction System Chloride Reduction Summary

Extraction Point	Start-up Sampling Date	Chloride (Initial) (mg/l)	Chloride (December 1, 2010) (mg/l)	Percent Reduction %
EP-01	8/18/2006	92,000	7,402	92%
EP-02	8/11/2006	94,800	2,036	98%
EP-03	8/11/2006	70,200	4,215	94%
EP-04	8/4/2006	45,300	7,299	84%
EP-05	8/11/2006	38,300	11,720	69%
EP-06	8/4/2006	11,000	1,069	90%

3.4 EXTRACTION SYSTEM DISCUSSION

When taken together, the pumping data, field measurements of conductivity, and chloride concentration data show that the extraction system is effectively removing impacted water from the alluvial sand and gravel layers and discontinuous coal seams beneath portions of the upland drainage. Based on the pumping flow rates, the extraction system is conforming to estimated design parameters.

4.0 SURFACE WATER SAMPLING

4.1 HISTORY

Following the discovery of the spill in the upland drainage, monitoring of surface water in the upland drainage and Charbonneau Creek was initiated in January 2006. The initial sampling events revealed that Charbonneau Creek was impacted by sodium, chloride, and ammonia downstream of the spill site as a result of the spill of produced water, as discussed in previous reports. The concentration of chloride in Charbonneau Creek at location AC#7 was initially as high as 64,000 mg/l on January 5, 2006, immediately following discovery of the spill. The concentration of chloride at AC#7 dropped to about 10,000 mg/l by January 13, 2006 and fell throughout the 2006 spring flush period, when large quantities of fresh water were flowing in the creek.

Following a gradual rebound of chloride concentrations over the summer of 2006, Charbonneau Creek surface water exhibited an overall decline in chloride concentrations at all sampling locations until the spring of 2009, when chloride concentrations began rising in conjunction with the increased liberation of chloride ions from the affected upland drainage. In 2009 the chloride concentration reached a peak of 470 mg/l at AC#7 on July 7.

4.2 ANALYTICAL RESULTS

Surface water samples were collected at various locations on Charbonneau Creek during this reporting period and analyzed for chloride, conductivity, and sulfate by Astro-Chem. The surface water sampling locations and selected analytical results are shown on Figure 6 in Appendix A. Four additional stations (Stations 17, 18, 19, and 20) were established during 2010.

The laboratory data reports are included in Appendix C. Sulfate continues to be analyzed at the request of NDDH; however, it has documented in previous reports that the observed sulfate concentrations are not attributable to the produced water spill. Therefore, the results of sulfate analyses are not discussed specifically in this report.

4.2.1 BEAVER POND

Table 9 shows the chloride data for the Beaver Pond for the current reporting period. Surface water samples were collected from the Beaver Pond during this reporting period beginning on August 11, 2010. Chloride concentrations in the Beaver Pond gradually declined from 792 mg/l on August 11, 2010 to 658 mg/l on September 28, 2010.

Table 9 Beaver Pond Chloride Concentrations – August 11 to September 28, 2010

	Sample Date							
Sample Location	**Aug 11**	**Aug 18**	**Aug 25**	**Sept 1**	**Sept 7**	**Sept 14**	**Sept 21**	**Sept 28**
Beaver Pond (AC #8)	792	781	740	740	673	658	668	658

4.2.2 STOCK POND

Table 10 shows the chloride data for the stock pond for the current reporting period. Chloride concentrations in the stock pond ranged from 26 to 53 mg/l during the reporting period. These

sample results show that chloride concentrations in the stock pond are not affected by the increased chloride concentrations observed in the Beaver Pond during the past two years.

Table 10 Stock Pond Chloride Concentrations – August 11 to September 28, 2010

Sample Location	Sample Date							
	Aug 11	Aug 18	Aug 25	Sept 1	Sept 7	Sept 14	Sept 21	Sept 29
Stock Pond	48	26	43	39	53	45	49	45

4.2.3 CHARBONNEAU CREEK

Astro-Chem collected samples from selected Charbonneau Creek locations during the reporting period as part of the routine monitoring of the creek and to evaluate the release of water containing elevated chloride concentrations from the Beaver Pond on Charbonneau Creek surface water quality. The sampling frequency varied from weekly to biweekly for selected water quality stations along the creek during this reporting period. Table 11 provides the results for this reporting period and selected sampling results are shown on Figure 6.

Chloride in Charbonneau Creek at station AC#7 remained relatively constant during the reporting period and ranged from 42 to 56.5 mg/l. Chloride in Charbonneau Creek generally decreased in the downstream direction for all sampling events during this reporting period, as has been observed for previous reporting periods.

Chloride concentrations at sampling location Station 17, located on the reach just upstream from the Beaver Pond outfall, ranged from 43 mg/l to 84 mg/l during the reporting period. These data demonstrate that this reach of Charbonneau Creek is not affected by discharge of impacted groundwater from the upland drainage.

Chloride at location Station 18, located just downstream from the Beaver Pond outfall, ranged from 303 mg/l to 412 mg/l, and was affected by releases of water with elevated chloride concentrations from the Beaver Pond. This monitoring location records the maximum concentrations of chloride along Charbonneau Creek. Chloride at supplemental sampling locations Station 19 and Station 20 ranged from 8.0 mg/l to 278 mg/l. These data demonstrate that the first tributary downstream from the Beaver Pond is not an important contributor to chloride concentrations in Charbonneau Creek.

Table 11 Charbonneau Creek Chloride Concentrations: August 11 to September 28, 2010

Sample Location	Sample Date							
	Aug 11	Aug 18	Aug 25	Sept 1	Sept 7	Sept 14	Sept 21	Sept 28
Station #1 – Concrete Bridge	NS	34	NS	6.0	NS	5.0	NS	NS
Station #3 – South Boundary	NS	15	NS	8.0	NS	7.0	NS	NS
Station #6 – Irwin Ranch	NS	20	NS	9.0	NS	7.0	NS	NS
Station #6.2 – Cattle Creek	NS	22	NS	7.0	NS	5.0	NS	NS
Station #6.3 – Cattle Creek	NS	38	NS	5.0	NS	19	NS	NS
Station # 6.4 – Cattle Creek	NS	13	NS	13	NS	19	NS	NS
Station 7 – CB Creek at Section Line	42	45	38	56.5	54	45	43	43
Station 17 -	84	75	43	76	78	56	53	43
Station 18	308	370	391	360	412	350	380	360
Station 19	83	101	144	154	195	380	247	247
Station 20	NS	NS	NS	5.0	7.0	6.0	5.0	4.0

NS=NotSampled

4.3 USGS GAUGING STATIONS

The United States Geologic Survey (USGS) maintained a gauging station on Charbonneau Creek at the concrete bridge crossing, approximately six miles north-northwest from the spill insertion point, from 1966 to 1981. The station was re-activated in early February 2006. Upon approval from NDDH, and at the request and expense of Zenergy, the USGS has installed a second gauging station on Charbonneau Creek at AC #7, approximately one mile downstream of the spill insertion point. The gauging stations transmit real-time specific conductance, temperature, and stream-flow data and can be accessed via the USGS National Water Information System: Web Interface. The gauging stations are set to alert Zenergy if unacceptable conductivity readings are documented. NDDH has established 1,000 mg/l chloride in Charbonneau Creek as the action level for down-stream users to remove cattle from the creek. KBA estimates that spill-impacted water at a specific conductivity of 10,000 µS/cm should have a chloride concentration of approximately 1,000 mg/l. KBA has recommended to Zenergy that a notification be provided by either USGS gauging station if the specific conductivity level exceeds 75% of the predicted action level or 7,500 µS/cm.

4.4 SURFACE WATER SAMPLING DISCUSSION

Monitoring conducted during the current reporting period shows that the chloride concentrations at AC #7 remained steady in the range of 42 mg/l to 56.5 mg/l. These data demonstrate that ending the pumping of water from the Beaver Pond has had a beneficial effect on the water quality in Charbonneau Creek. In addition, it appears that filling of the Beaver Pond has helped to retain more water in the reach of Charbonneau Creek above the insertion point by eliminating the steep artificial head gradient between Charbonneau Creek and the pond that had been created by pumping down the level of the Beaver Pond.

Analytical results for the supplemental Station 17 on Charbonneau Creek upstream from the insertion point demonstrate that this reach of Charbonneau Creek is not affected by discharge of impacted groundwater from the upland drainage. Analytical results for the supplemental stations 19 and 20 on Charbonneau Creek show that the first tributary downstream from the Beaver Pond is not an important contributor to chloride concentrations in Charbonneau Creek.

Review of the chloride data collected on Charbonneau Creek show that many of the monitoring stations show similar data and can be eliminated from future monitoring. The revised surface water monitoring program will be implemented beginning in May 2011 and will include the following stations: Stock Pond, Beaver Pond, AC#7, and Station 3 (South Boundary). Samples will be collected every two weeks during the spring runoff period and monthly for the remainder of the year at these stations. The sampling frequency and number of monitoring stations will be increased if data show that high chloride levels are returning to Charbonneau Creek.

5.0 SURFICIAL SOIL SAMPLING

5.1 HISTORY

Following the discovery of the spill in the upland drainage, soil samples were collected from various locations and depths throughout the spill-affected area. Background soil samples were also collected from outside the upland drainage to provide a basis for comparison for the soil analytical results. The individual sampling events are listed and described below:

- January 2006: Surficial soil samples were collected from four locations within the upland drainage from spill affected areas, and from one background location. The spill affected areas included the hillside below the spill location, the drainage confluence near well MW-1, the upper reach of the stock pond, and the lower end of the stock pond.
- May 2006: Soil samples were collected from four locations within the upland drainage from spill affected areas, and from three background locations. The spill affected areas included the hillside below the spill location, the drainage confluence near well MW-1, and two locations within the Beaver Pond area. The background, hillside, and confluence samples were collected at three depth intervals using a hollow stem auger drill rig and split-spoon sampling techniques. A trackhoe was used to excavate two exploratory trenches in the Beaver Pond, and soil samples were collected directly from the trackhoe bucket at two depth intervals.
- August 2006: Following the excavation of sediments from the Beaver Pond and three potholes in the upland drainage, post-excavation soil samples were collected from the exposed soil surfaces prior to re-grading. Additionally, soil samples were collected from two locations within the stock pond which had previously been submerged.
- September 2007: Soil samples were collected from two depths on the hillside below the original spill location, from the drainage confluence near EP-01 and MW-1, and from the edge of the stock pond at the northern end of the stock dam. These samples were collected at the same locations as soil samples collected in January 2006 to evaluate the progress of remediation in these areas. One sample was also collected from the lower portion of the upland drainage, above the upper reach of the Beaver Pond, to document soil conditions in this area.
- September 2008: Soil samples were collected from the same locations as listed above for the September 2007 samples.
- November 2008: Soil samples were collected from five locations to evaluate the soil conditions in areas where re-vegetation is not occurring. These samples were collected at the confluence of ephemeral drainages below MW-3, just below the sedimentation basin below EP-02, in the formerly ponded area between EP-03 and EP-04, in the reach above EP-05, near the culvert and, in the reach above EP-05, near well BP-03.
- September 2009: Soil samples were collected from two depths on the hillside below the original spill location, from the drainage confluence near EP-01 and MW-1, and from the edge of the stock pond at the northern end of the stock dam. These samples were collected at the same locations as soil samples collected in January 2006 to evaluate the progress of remediation in these areas.

Current and historic soil analytical results are included in Table B-3 in Appendix B.

5.2 FIELD PROCEDURES

On September 29, 2010, KBA met a representative of the NDIC at the site to collect surficial soil samples for annual soil monitoring in spill affected areas. The locations of the previous samples collected at these locations were approximately established utilizing handheld global positioning system (GPS) units. The soil sample names and locations are shown on Figure 8 and described as follows:

- ZJS-HS-01 & -02: Collected from two depths on the hillside below the original spill location. The location corresponds to previous samples of the same name collected in January 2006, September 2007, September 2008, and September 2009.
- ZJS-DS-01 & -02: Collected from the drainage confluence above the location of EP-01 and MW-1. The location corresponds to previous samples of the same name collected in January 2006, September 2007, September 2008, and September 2009.
- ZJS-SPS-03 & -04: Collected from the edge of the stock pond at the northern end of the stock dam. The location corresponds to previous samples of the same name collected in January 2006, September 2007, September 2008, and September 2009.

Soil samples at each location were collected in accordance with the following protocol: Once the sampling location was established with the hand-held GPS unit, three individual points were selected at random within ten feet of the coordinates. The surface overburden was removed with a shovel and individual aliquots of the soil were collected from each point with a stainless steel spoon and the three aliquots were homogenized in a stainless steel bowl. Laboratory supplied four-ounce glass jars with a Teflon® lined lids were filled with the homogenized sample and the filled jars were labeled and placed immediately on ice. Following the collection of the 0 to 6" sample, the holes were excavated using a shovel and the same sample collection procedures were followed at a depth of 12 to 18". All sampling equipment was decontaminated before use and between sample depths and locations by utilizing a three stage wash and rinse with an Alconox® solution and distilled water. Since the shovel was not stainless steel, the sampler prepared the sample locations by removing the first layer of soil contacted by the shovel with a stainless steel spoon prior to collecting the sample aliquot. New Nitrile® gloves were utilized at each sample location and depth. All soil samples were shipped via overnight courier to the ESC laboratory in Mt. Juliet, Tennessee for analysis of TAL metals, chloride, sulfate, pH, soil conductivity, and sodium-adsorption ratio (SAR).

5.3 ANALYTICAL RESULTS

A summary of the historical analytical results for soil samples collected at the site is presented in Table B-3 in Appendix B. Table 12 summarizes significant analytical parameters for the September 2010 sampling event and compares them with analytical results from the previous sampling events conducted in September 2007, September 2008, and September 2009 at the same or similar locations and depths. The metals presented on Table 10 are those that were detected in the produced water sample collected from the Jackson Well on January 19, 2006.

Table 12 Comparison of Soil Analytical Results from 2007, 2008, 2009, and 2010

		Parameter:	Metals					Anions			General Chemistry	
Sample ID	Date	Depth	Aluminum mg/kg	Barium mg/kg	Iron mg/kg	Manganese mg/kg	Sodium mg/kg	Chloride mg/kg	Sulfate mg/kg	Ammonia mg/kg	Sp. Cond. umhos/cm	SAR Ratio
ZJS-HS-01	9/12/2007	0-6"	8,800	100	20,000	390	310	23	2,000	<5.0	3,700	3.7
	9/17/2008	0-6"	8,100	94	17,000	460	270	47	4,200	120	7,500	2.7
	9/15/2009	0-6"	9,000	78	16,000	310	210	16	7,800	<5.0	3,200	2.9
	9/30/2010	0-6”	11,000	160	16,000	450	100	28	<50	<5.0	160	0.60
ZJS-HS-02	9/12/2007	12-18"	5,500	290	21,000	560	1,600	980	790	72	6,600	43
	9/17/2008	12-18"	5,000	430	20,000	540	1,800	1,000	1,300	12	6,800	33
	9/15/2009	12-18"	3,700	330	20,000	510	1,100	870	1,300	12	5,400	36
	9/30/2010	12-18”	12,000	93	16,000	330	240	32	<50	<5.0	230	4.6
ZJS-SPS-03	9/12/2007	0-6"	11,000	110	13,000	130	1,200	80	1,200	<5.0	3,700	6.2
	9/17/2008	0-6"	11,000	150	16,000	200	1,400	82	3,000	<5.0	5,900	9.0
	9/15/2009	0-6"	12,000	110	12,000	110	490	31	600	<5.0	1,100	6.1
	9/30/2010	0-6”	11,000	120	12,000	180	580	52	540	9.0	1,100	7.0
ZJS-SPS-04	9/12/2007	12-18"	10,000	96	17,000	370	2,100	320	350	24	2,100	13
	9/17/2008	12-18"	8,900	140	15,000	240	2,000	200	840	<5.0	4,300	25
	9/15/2009	12-18"	13,000	140	17,000	240	2,000	360	820	23	3,100	20
	9/30/2010	12-18”	14,000	180	15,000	240	1,300	56	250	14	470	14
ZJS-LDS-01	9/12/2007	0-6"	9,300	150	14,000	350	4,800	9,000	20,000	8.3	44,000	18
	9/17/2008	0-6"	8,100	150	16,000	780	5,200	11,000	4,100	<5.0	40,000	31
	9/15/2009	0-6"	1,100	150	14,000	550	4,600	8,300	12,000	<5.0	23,000	28
	9/29/2010	0-6”	12,000	140	12,000	340	6,000	13,000	10,000	20	20,000	31
ZJS-LDS-02	9/12/2007	12-18"	7,300	130	14,000	220	4,600	6,100	580	60	21,000	27
	9/17/2008	12-18"	7,600	190	13,000	300	4,100	5,100	240	29	15,000	36
	9/15/2009	12-18"	9,800	160	15,000	230	4,000	6,800	470	19	16,000	29
	9/29/2010	12-18”	13,000	160	14,000	380	3,700	10,000	3,700	40	16,000	18
Summary statistics for 6 background soil samples collected May 24, 2006 at various depths												
Mean Background Concentration			4,883	116	11,967	373	579	33	NA	NA	438	5.5

Notes: Sp. Cond. = soil electrical conductivity, or specific conductance
SAR = sodium absorption ratio NA = not analyzed

During the September 2010 sampling event, the specific conductivity of all samples at all depths exceeded the statistical reference of the mean background results plus one standard deviation, as has been seen in previous sampling events. Compared to the samples collected in September 2008 from the same locations, specific conductivity was lower for all samples collected except for the deeper lower drainage sample (ZJS-LDS-02), which was slightly higher.

The sodium and chloride concentrations from all samples at all depths except the shallower hillside sample (ZJS-HS-01) and the shallow stock pond sample (ZJS-SPS-03) exceeded the background reference concentration. Sodium concentrations were lower in all samples except the deep confluence sample (ZJS-DS-02) and the deep stock pond sample (ZJS-SPS-04) as compared to the samples collected in 2008. Chloride was lower in all samples except the deep stock pond sample (ZJS-SPS-04), and the deep lower drainage sample (ZJS-LDS-02). The sodium adsorption ratio (SAR) for all samples at all depths except for the shallow hillside sample (ZJS-HS-01) and the shallower stock pond area sample (ZJS-SPS-03) exceeded the background reference. SAR was lower for all samples except both hillside samples (ZJS-HS-01 and ZJS-HS-02) and the deep confluence sample (ZJS-DS-02).

The aluminum concentration from all samples at all depths exceeded the background reference concentration, except for the deeper hillside sample (ZJS-HS-02) and shallow lower drainage sample (ZJS-LDS-01). Barium concentrations from all samples at all depths exceeded the background reference concentration, except for the shallow hillside sample (ZJS-HS-01) and shallow stock pond sample (ZJS-SPS-03). Iron concentrations have changed little since the previous sampling events. Manganese concentrations exceed the background reference for the deep hillside sample (ZJS-HS-02) and shallow lower drainage sample (ZJS-LDS-01) only.

5.4 SOIL SAMPLING DISCUSSION

Soil samples were collected from three locations at two depths on September 29 and 30, 2010 in accordance with the previous Long-Term Monitoring Plan. Concentrations of aluminum, sodium, and chloride have been historically detected at concentrations which exceeded background soil concentrations. The analytical results from the September 2009 sampling indicate that sodium and chloride are still present in the spill-affected surficial soils on the hillside and within the ephemeral drainage at concentrations higher than the background soils. In the upper drainage and hillside areas, the residual chloride concentration is lower in the samples collected near the surface reflecting the progress of remediation.

The results of soil samples collected for the past four years demonstrate that the concentrations of metals and anions in the affected soils have fluctuated without a measurable decrease. Results for the hillside soil samples show a recent decrease in salt components sodium, chloride, SAR, and specific conductance. These results may be interpreted in two ways. First, the decreases in salt parameters seen in the hillside soils show that the application of gypsum has had a measurable, beneficial effect on the salt concentrations, as expected. This is also shown by the progress of revegetation on the hillside, which is now complete. However, the results for the other two pairs of soil samples collected from the stock pond and the lower drainage show no measurable decrease of metals, anions, or salt parameters during this time period. This is also consistent with the lack of revegetation in these areas. Second, in general, the results show the variability of metals and anions in soils in the region, and the difficulty of sampling the exact location as previous years.

Based on these results, annual soil sampling at these locations will be discontinued. In place of the annual soil sampling, soil samples will be collected at discrete locations where revegetation is not occurring to guide future reclamation efforts with guidance from the NDIC.

6.0 SUMMARY AND RECOMMENDATIONS

6.1 SUMMARY

Chloride concentrations increased in three of the four upper drainage wells since the last sampling event by an average of 19.2%. Well MW-1 showed a large drop in chloride from 49,000 mg/l to 25,000 mg/l (a decrease of 49%); however, this well was partially submerged during the sampling event and may have been influenced by surface water infiltration.

Chloride concentrations in both lower drainage wells decreased. Chloride in well BP-3 decreased from 37,000 mg/l in April 2010 to 28,000 mg/l and chloride in well SD-1 decreased from 5,200 mg/l to an all-time low of 1,400 mg/l for this event. The chloride concentration in well MW-10 was 7,200 mg/l for this sampling event, up slightly from the previous concentration of 6,800 mg/l. Chloride in well MW-11 was unchanged at 53 mg/l. Chloride concentrations in monitoring well MW-5 increased from 3,500 mg/l in April 2010 to 5,500 mg/l for this sampling event. The increased chloride concentration was accompanied by an increase of chloride concentrations in the Beaver Pond surface water.

Chloride concentrations in the Beaver Pond increased from 370 mg/l on May 4, 2010 to a peak of 1,172 mg/l on June 8, 2010. Chloride concentrations fluctuated between 432 mg/l and 1,028 mg/l for the remainder of the reporting period. Chloride concentrations in the stock pond ranged from 24.0 to 46.0 mg/l during the reporting period. These sample results show that chloride concentrations in the stock pond are not affected by the increased chloride concentrations observed in the Beaver Pond during this reporting period.

Chloride in Charbonneau Creek at station AC#7 reached a peak of 100 mg/l on May 11 and remained at this concentration through May 27. The chloride concentration at AC#7 ranged from 23 mg/l to 73 mg/l for the remainder of the reporting period. Chloride in Charbonneau Creek generally decreased in the downstream direction for all sampling events during this reporting period, as has been observed for previous reporting periods.

Chloride concentrations at supplemental sampling location Station 17, located on the reach just upstream from the Beaver Pond outfall, ranged from 7.0 mg/l to 68 mg/l. These data demonstrate that this reach of Charbonneau Creek is not affected by discharge of impacted groundwater from the upland drainage. Chloride at supplemental location Station 18, located just downstream from the Beaver Pond outfall, ranged from 8.0 mg/l to 432 mg/l, and was affected by releases of water with elevated chloride concentrations from the Beaver Pond. Chloride at supplemental locations Station 19 and Station 20 ranged from 8.0 mg/l to 278 mg/l. These data demonstrate that the first tributary downstream from the Beaver Pond is not an important contributor to chloride concentrations in Charbonneau Creek.

6.2 RECOMMENDATIONS

Based on the findings discussed above, KBA recommends the following:

- Continued daily monitoring of the extraction system, with maintenance and modifications performed as necessary;
- Revised long-term monitoring as described in this Annual Remediation Progress Report;

- Continued periodic sampling of extraction points and two surface water locations (Beaver Pond and Stock Pond) with the frequency of sampling dictated by site conditions;
- Continued periodic sampling of selected stations along Charbonneau Creek until chloride concentrations return to background conditions or stabilize at a low value.

APPENDIX A
Figures

APPENDIX B
Tables and Charts

TABLE B-1

Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	pH	Specific Conductance	Temperature	Chloride	Sulfate	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					6.5 – 8.5			250	250	
MW-1	9/8/2006	2131.21	7.20	2124.01	6.15	156,600	14.9	111000	881	30.3
MW-1	11/8/2006	2131.21	7.56	2123.65	6.3	116,000	10.3	118000	794	276
MW-1	3/14/2007	2131.21	3.83	2127.38	5.73	118,400	4.4	80000	1000	250
MW-1	6/13/2007	2131.21	5.26	2125.95	6.69	46,000	11.8	36000	1500	110
MW-1	9/11/2007	2131.21	7.32	2123.89	6.39	44700	15.8	68000	930	230
MW-1	11/14/2007	2131.21	7.46	2123.75	5.61	62700	8.9	84000	1000	250
MW-1	3/12/2008	2131.21	7.69	2123.52	6.45	174300	4.1	82000	1000	250
MW-1	6/3/2008	2131.21	7.82	2123.39	5.84	53500	9.5	92000	1000	210
MW-1	9/16/2008	2131.21	8.27	2122.94	5.89	53600	13.3	86000	1000	260
MW-1	11/19/2008	2131.21	8.38	2122.83	4.97	23300	6.7	85000	1000	320
MW-1	4/21/2009	2131.21	3.39	2127.82	NM	27200	11.9	31000	1600	120
MW-1	6/30/2009	2131.21	6.22	2124.99	6.33	23800	14.3	49000	1600	150
MW-1	9/14/2009	2131.21	7.53	2123.68	6.15	66200	15.1	54000	1400	170
MW-1	11/11/2009	2131.21	7.71	2123.50	6.2	131200	8.3	85000	1400	230
MW-1	4/11/2010	2131.21	3.50	2127.71	6.36	60100	4.9	49000	1800	120
MW-1	6/29/2010	2131.21	3.65	2127.56	6.77	51400	12.3	25000	2100	43
MW-2	9/8/2006	2134.51	7.48	2127.03	5.94	193,000	15.4	128000	260	246
MW-2	11/8/2006	2134.51	8.25	2126.26	5.92	151,000	10.1	152000	462	533
MW-2	3/14/2007	2134.51	6.02	2128.49	6.06	95,300	1.9	140000	530	480
MW-2	6/13/2007	2134.51	5.35	2129.16	7.00	33,400	13.2	24000	4100	170
MW-2	9/11/2007	2134.51	6.70	2127.81	6.93	35700	15.4	42000	2000	280
MW-2	11/14/2007	2134.51	7.34	2127.17	5.59	71200	8.7	82000	1200	320
MW-2	3/12/2008	2134.51	8.34	2126.17	6.79	162200	4.8	94000	1200	240
MW-2	6/3/2008	2134.51	8.99	2125.52	6.14	51900	9.8	70000	1100	310
MW-2	9/16/2008	2134.51	9.77	2124.74	6.14	50600	12.8	83000	1100	340
MW-2	11/19/2008	2134.51	10.19	2124.32	5.01	23700	7.6	85000	960	140
MW-2	4/21/2009	2134.51	5.04	2129.47	NM	9080	11.2	10000	1800	57
MW-2	6/30/2009	2134.51	7.58	2126.93	6.72	25100	12.7	32000	2000	130
MW-2	9/14/2009	2134.51	6.96	2127.55	6.39	59400	13.4	39000	1800	130
MW-2	11/11/2009	2134.51	7.34	2127.17	6.46	113300	9.5	31000	1800	160
MW-2	4/11/2010	2134.51	4.28	2130.23	6.85	67200	5.8	14000	870	40
MW-2	6/29/2010	2134.51	2.86	2131.65	6.83	70100	13.2	19000	1600	74

TABLE B-1
Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	pH	Specific Conductance	Temperature	Chloride	Sulfate	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					6.5 – 8.5			250	250	
MW-3	9/8/2006	2138.7	7.45	2131.25	**6.1**	108,000	**13.9**	**66000**	**1650**	7.7
MW-3	11/8/2006	2138.7	7.82	2130.88	**6.06**	82,500	**10.8**	**45100**	**574**	13.2
MW-3	3/14/2007	2138.7	6.52	2132.18	**6.21**	58,700	**5.2**	**42000**	**1800**	25
MW-3	6/13/2007	2138.7	7.11	2131.59	6.62	39,600	**11.3**	**42000**	**1600**	31
MW-3	9/11/2007	2138.7	8.60	2130.10	6.73	32100	**14.2**	**33000**	**1500**	19
MW-3	11/14/2007	2138.7	9.01	2129.69	**5.54**	50000	**9.7**	**46000**	**1400**	16
MW-3	3/12/2008	2138.7	10.81	2127.89	6.84	114800	**6.8**	**36000**	**1500**	19
MW-3	6/3/2008	2138.7	11.68	2127.02	**5.96**	44200	**9.1**	**48000**	**1300**	28
MW-3	9/16/2008	2138.7	12.43	2126.27	**6.37**	35300	**13.7**	**47000**	**1400**	23
MW-3	11/19/2008	2138.7	13.43	2125.27	**4.96**	16490	**8.1**	**45000**	**1200**	18
MW-3	4/21/2009	2138.7	6.48	2132.22	**NM**	16450	**11.5**	**37000**	**1900**	27
MW-3	6/30/2009	2138.7	10.24	2128.46	**6.06**	31500	**13.5**	**42000**	**1700**	31
MW-3	9/14/2009	2138.7	9.33	2129.37	**6.12**	54100	**13.2**	**54000**	**1300**	22
MW-3	11/11/2009	2138.7	10.95	2127.75	**5.97**	115900	**10.9**	**42000**	**1500**	26
MW-3	4/11/2010	2138.7	7.46	2131.24	**6.2**	110600	7	**35000**	**2000**	22
MW-3	6/29/2010	2138.7	6.47	2132.23	6.51	104900	14.1	**42000**	**1600**	24
MW-4	9/8/2006	2146.84	ND							
MW-4	11/8/2006	2146.84	11.90	2134.94	**6.36**	66,500	**9.8**	**38100**	**1380**	10.7
MW-4	3/14/2007	2146.84	11.95	2134.89	**6.21**	52,400	**5.7**	**34000**	**1300**	18
MW-4	6/13/2007	2146.84	8.30	2138.54	6.69	41,800	**11.5**	**38000**	**940**	58
MW-4	9/11/2007	2146.84	11.05	2135.79	6.64	33000	**13.8**	**41000**	**1300**	34
MW-4	11/14/2007	2146.84	12.27	2134.57	**5.87**	44900	**9.6**	**49000**	**1400**	35
MW-4	3/12/2008	2146.84	13.59	2133.25	7.05	96800	**6.9**	**41000**	**1400**	29
MW-4	6/3/2008	2146.84	13.95	2132.89	**6.18**	42800	**9.2**	**44000**	**1400**	24
MW-4	9/16/2008	2146.84	14.09	2132.75	**5.95**	34800	**14.6**	**50000**	**1300**	NA
MW-4	11/20/2008	2146.84	14.62	2132.22	**4.53**	15870	**6.9**	**4700**	**1300**	NA
MW-4	4/21/2009	2146.84	7.59	2139.25	**NM**	9590	**11.4**	**7100**	**5300**	48
MW-4	6/30/2009	2146.84	12.52	2134.32	6.82	24600	**12.8**	**29000**	**2800**	62
MW-4	9/14/2009	2146.84	11.70	2135.14	**6.27**	50400	**12.4**	**37000**	**2000**	51
MW-4	11/11/2009	2146.84	12.57	2134.27	**6.27**	95100	**12.3**	**39000**	**1900**	54
MW-4	4/11/2010	2146.84	6.13	2140.71	6.72	69400	**7.7**	**4900**	**6600**	21
MW-4	6/29/2010	2146.84	5.65	2141.19	7.05	47200	14.8	**5000**	**6800**	13

TABLE B-1

Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	pH	Specific Conductance	Temperature	Chloride	Sulfate	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					**6.5 – 8.5**			250	250	
MW-5	9/8/2006	2116.93	8.40	2108.53	7.14	24,300	**12.8**	**8200**	**2260**	1.6
MW-5	11/8/2006	2116.93	8.72	2108.21	7.78	15,800	**11.5**	**7000**	**2220**	3.6
MW-5	3/14/2007	2116.93	ice at 5.45							
MW-5	6/13/2007	2116.93	4.78	2112.15	6.82	12,420	**11.6**	**8000**	**2000**	2.9
MW-5	9/11/2007	2116.93	8.08	2108.85	7.00	10010	**13.0**	**7800**	**1900**	3.0
MW-5	11/14/2007	2116.93	8.82	2108.11	**6.27**	13600	**9.3**	**7600**	**1900**	2.9
MW-5	3/12/2008	2116.93	ice at 5.70							
MW-5	6/3/2008	2116.93	7.35	2109.58	6.56	8960	**6.8**	**3900**	**1400**	1.4
MW-5	9/16/2008	2116.93	7.29	2109.64	7.04	4750	**14.9**	**980**	**1200**	1.3
MW-5	11/19/2008	2116.93	7.32	2109.61	7.15	4550	**7.2**	**1300**	**1200**	1.2
MW-5	4/21/2009	2116.93	6.34	2110.59	**NM**	3480	**14.8**	**2800**	**1900**	2.0
MW-5	6/30/2009	2116.93	7.41	2109.52	7.33	8660	**14.2**	**2800**	**2300**	1.8
MW-5	9/14/2009	2116.93	8.11	2108.82	7.24	7440	**14.7**	**3000**	**2200**	2.0
MW-5	11/11/2009	2116.93	7.80	2109.13	6.86	14130	**9.9**	**3700**	**2100**	2.2
MW-5	4/11/2010	2116.93	6.54	2110.39	7.18	15700	**3.8**	**3500**	**2500**	1.6
MW-5	6/29/2010	2116.93	5.87	2111.06	7.04	4770	10.3	**5500**	**2500**	2.5
MW-7	9/8/2006	2122.79	11.33	2111.46	**8.58**	3,650	**10.4**	5.7	**1300**	ND
MW-7	11/8/2006	2122.79	11.86	2110.93	**8.59**	4,230	**11**	5.67	**1160**	3.7
MW-7	3/14/2007	2122.79	12.59	2110.20	7.17	2,440	**8.1**	2.4	**1100**	0.15
MW-7	6/13/2007	2122.79	12.10	2110.69	7.59	1,915	**10.4**	2.8	**1200**	<0.10
MW-7	9/11/2007	2122.79	12.13	2110.66	7.63	2240	**11.5**	1.8	**1200**	<0.10
MW-7	11/14/2007	2122.79	12.82	2109.97	7.12	2620	**9.3**	2.6	**1100**	<0.10
MW-7	3/12/2008	2122.79	12.88	2109.91	7.45	3060	**9.6**	2.0	**910**	<0.10
MW-7	6/3/2008	2122.79	12.72	2110.07	7.29	2310	**10.2**	2.0	**1100**	<0.10
MW-7	9/16/2008	2122.79	12.32	2110.47	7.25	2210	**11.8**	1.7	**1100**	<0.10
MW-7	11/19/2008	2122.79	12.73	2110.06	7.54	1119	**8.8**	2.5	**1100**	<0.10
MW-7	4/21/2009	2122.79	11.93	2110.86	**NM**	1350	**12.3**	2.8	**1000**	<0.10
MW-7	6/30/2009	2122.79	11.84	2110.95	8.13	2780	**14.6**	4.4	**1000**	0.14
MW-7	9/14/2009	2122.79	12.94	2109.85	7.17	1784	**12**	5.2	**1100**	0.11
MW-7	11/11/2009	2122.79	12.10	2110.69	7.28	3160	**11.1**	3.6	**980**	0.18
MW-7	4/11/2010	2122.79	11.62	2111.17	7.42	3310	**8.1**	4.4	**1100**	<0.10
MW-7	6/29/2010	2122.79	10.84	2111.95	7.71	1820	12.8	4.0	**980**	<0.10

TABLE B-1

Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	**pH**	Specific Conductance	**Temperature**	**Chloride**	**Sulfate**	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					**6.5 – 8.5**			250	250	
MW-8	9/8/2006	2133.91	20.48	2113.43	**8.72**	4,310	**9.1**	10.9	**1070**	ND
MW-8	11/8/2006	2133.91	19.12	2114.79	**9.55**	4,550	**9.1**	15.6	**1890**	1
MW-8	3/14/2007	2133.91	18.61	2115.30	7.35	3,730	**7.6**	12	**2200**	0.61
MW-8	6/13/2007	2133.91	20.47	2113.44	7.66	3,290	**9.6**	8.0	**1400**	0.40
MW-8	9/11/2007	2133.91	21.72	2112.19	8.00	2760	**10.8**	7.0	**1300**	0.35
MW-8	11/14/2007	2133.91	21.90	2112.01	7.16	3790	**7.9**	10	**1900**	0.35
MW-8	3/12/2008	2133.91	20.27	2113.64	7.14	4910	**8.9**	9.9	**1800**	0.38
MW-8	6/3/2008	2133.91	21.40	2112.51	7.38	3300	**10.5**	8.0	**1500**	0.21
MW-8	9/16/2008	2133.91	21.50	2112.41	7.55	3270	**12.8**	9.2	**1700**	0.2
MW-8	11/19/2008	2133.91	21.09	2112.82	6.73	1507	**7.4**	8.4	**1400**	0.22
MW-8	4/21/2009	2133.91	18.40	2115.51	**NM**	1462	**12.1**	8.8	**1200**	0.43
MW-8	6/30/2009	2133.91	19.73	2114.18	8.18	2780	**12.8**	9.0	**1200**	0.37
MW-8	9/14/2009	2133.91	20.48	2113.43	7.88	2510	**11.9**	11	**1700**	0.14
MW-8	11/11/2009	2133.91	19.55	2114.36	7.29	4580	**8.2**	9.8	**1600**	0.11
MW-8	4/11/2010	2133.91	17.80	2116.11	7.55	4760	**8.3**	10	**1600**	0.12
MW-8	6/29/2010	2133.91	17.65	2116.26	6.56	15200	10.1	9	**1500**	0.15
MW-9	9/8/2006	2122.06	8.97	2113.09	**8.59**	3,720	**10.9**	11.9	**1200**	ND
MW-9	11/8/2006	2122.06	8.04	2114.02	**8.55**	4,620	**11**	6.7	**1610**	2.9
MW-9	3/14/2007	2122.06	7.99	2114.07	7.29	3,210	**7.1**	2.4	**1600**	0.66
MW-9	6/13/2007	2122.06	9.61	2112.45	7.74	2,870	**10.7**	2.8	**1700**	0.49
MW-9	9/11/2007	2122.06	10.41	2111.65	7.85	2840	**11.7**	1.8	**1400**	0.32
MW-9	11/14/2007	2122.06	10.81	2111.25	7.21	3120	**10.3**	2.2	**1600**	0.61
MW-9	3/12/2008	2122.06	9.42	2112.64	7.25	4010	**8.8**	1.8	**1400**	0.23
MW-9	6/3/2008	2122.06	10.35	2111.71	7.36	2990	**9.5**	1.7	**1300**	0.19
MW-9	9/16/2008	2122.06	10.33	2111.73	7.26	2810	**12.8**	1.6	**1500**	0.24
MW-9	11/19/2008	2122.06	10.20	2111.86	6.88	1433	**8.1**	8.9	**1400**	0.27
MW-9	4/21/2009	2122.06	7.49	2114.57	**NM**	1560	**10.5**	2.9	**1400**	0.22
MW-9	6/30/2009	2122.06	8.56	2113.50	8.22	2740	**12.4**	2.3	**1300**	0.21
MW-9	9/14/2009	2122.06	9.10	2112.96	7.26	2150	**12.8**	3.6	**1500**	0.16
MW-9	11/11/2009	2122.06	8.38	2113.68	7.63	4360	**10.5**	2	**1400**	0.19
MW-9	4/11/2010	2122.06	6.96	2115.10	7.24	2860	**7.2**	2.3	**1400**	0.21
MW-9	6/29/2010	2122.06	6.70	2115.36	7.6	2330	11.3	2.2	**1300**	0.17

TABLE B-1

Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	**pH**	Specific Conductance	**Temperature**	**Chloride**	**Sulfate**	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					6.5 – 8.5			250	250	
MW-10	9/8/2006	2144.35	35.25	2109.10	7.31	14,400	**8.9**	**7840**	**828**	3.8
MW-10	11/8/2006	2144.35	33.86	2110.49	6.88	51,100	**8.7**	**30900**	**1010**	35.7
MW-10	3/14/2007	2144.35	31.39	2112.96	**6.31**	29,900	**8.3**	**17000**	**1200**	25
MW-10	6/13/2007	2144.35	35.08	2109.27	7.73	13,000	**10.9**	**6200**	**1300**	10
MW-10	9/11/2007	2144.35	35.15	2109.20	7.19	9270	**10.8**	**6100**	**1600**	12
MW-10	11/14/2007	2144.35	34.71	2109.64	**6.4**	14180	**7.6**	**10000**	**1400**	13
MW-10	3/12/2008	2144.35	34.81	2109.54	**6.47**	24100	**9.4**	**6400**	**1300**	12
MW-10	6/3/2008	2144.35	35.13	2109.22	6.57	10560	**10.3**	**6100**	**1600**	14
MW-10	9/16/2008	2144.35	36.26	2108.09	6.58	10140	**12.3**	**5200**	**1400**	11
MW-10	11/19/2008	2144.35	36.24	2108.11	**5.13**	4510	**7.1**	**4300**	**1600**	12
MW-10	4/21/2009	2144.35	29.58	2114.77	**NM**	5650	**12.1**	**16000**	**1300**	12
MW-10	6/30/2009	2144.35	31.81	2112.54	7.11	9370	**14.1**	**7000**	**1300**	13
MW-10	9/14/2009	2144.35	33.65	2110.70	6.53	10700	**11.2**	**7700**	**1200**	9.7
MW-10	11/11/2009	2144.35	32.41	2111.94	6.71	23400	**8.2**	**6400**	**1300**	12
MW-10	4/11/2010	2144.35	28.87	2115.48	6.82	24100	**9**	**6800**	**1400**	11
MW-10	6/29/2010	2144.35	28.94	2115.41	**6.46**	83400	11.1	**7200**	**1200**	13
MW-11	9/8/2006	2143.27	38.89	2104.38	8.5	7,500	**10.6**	65	**4070**	0.84
MW-11	11/8/2006	2143.27	36.62	2106.65	8.09	6,800	**9**	59.4	**3850**	2
MW-11	3/14/2007	2143.27	37.17	2106.10	**6.43**	5,230	**8.7**	54	**3100**	1.4
MW-11	6/13/2007	2143.27	37.81	2105.46	7.17	4,770	**11.4**	52	**3400**	1.2
MW-11	9/11/2007	2143.27	38.46	2104.81	7.25	4730	**10.9**	53	**3400**	1.2
MW-11	11/14/2007	2143.27	38.33	2104.94	6.69	5170	**8.7**	52	**3500**	1.0
MW-11	3/12/2008	2143.27	37.89	2105.38	6.93	7000	**9.5**	51	**3500**	0.9
MW-11	6/3/2008	2143.27	38.38	2104.89	6.85	5110	**10.6**	51	**3800**	0.6
MW-11	9/16/2008	2143.27	38.89	2104.38	6.87	4650	**13.4**	49	**3700**	0.71
MW-11	11/19/2008	2143.27	38.64	2104.63	6.85	2410	**7.1**	49	**3500**	0.64
MW-11	4/21/2009	2143.27	38.17	2105.10	**NM**	5410	**15.2**	50	**3400**	0.84
MW-11	6/30/2009	2143.27	38.44	2104.83	7.59	4980	**13.3**	110	**3400**	0.64
MW-11	9/14/2009	2143.27	38.70	2104.57	7.09	3910	**12.5**	58	**3300**	0.54
MW-11	11/11/2009	2143.27	38.42	2104.85	7.14	3580	**10.4**	55	**3500**	0.54
MW-11	4/11/2010	2143.27	37.29	2105.98	6.99	7110	**9.4**	53	**3400**	0.63
MW-11	6/29/2010	2143.27	37.48	2105.79	7.4	4170	17.6	53	**3400**	0.43

TABLE B-1

Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	**pH**	Specific Conductance	**Temperature**	**Chloride**	**Sulfate**	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					6.5 – 8.5			250	250	
BP-3	5/25/2006	2121.31	NM		6.90	51,600	**8.0**	**111000**	**954**	408
BP-3	9/8/2006	2121.31	7.79	2113.52	6.95	52,500	**13.9**	**24300**	**1540**	4.6
BP-3	11/8/2006	2121.31	7.80	2113.51	6.58	42,800	**10.4**	**20700**	**1300**	5
BP-3	3/14/2007	2121.31	no access							
BP-3	6/13/2007	2121.31	6.27	2115.04	6.67	29,500	**9.6**	**20000**	**980**	2.7
BP-3	9/11/2007	2121.31	8.49	2112.82	**6.48**	25500	**14.5**	**21000**	**1200**	4.2
BP-3	11/14/2007	2121.31	8.31	2113.00	**5.94**	31300	**10.5**	**26000**	**1100**	4.0
BP-3	3/12/2008	2121.31	8.14	2113.17	6.69	71100	**4.4**	**29000**	**1000**	4.0
BP-3	6/3/2008	2121.31	8.40	2112.91	**6.26**	30100	9.2	**36000**	**1100**	5.5
BP-3	9/16/2008	2121.31	8.88	2112.43	**6.23**	34700	16.5	**39000**	**840**	7.5
BP-3	11/19/2008	2121.31	8.55	2112.76	**4.61**	12900	8.4	**38000**	**940**	10
BP-3	4/21/2009	2121.31	6.18	2115.13	**NM**	14850	**11.1**	**37000**	**880**	13
BP-3	6/30/2009	2121.31	6.97	2114.34	6.55	27800	**14**	**39000**	**7500**	14
BP-3	9/14/2009	2121.31	7.78	2113.53	**6.12**	46800	**16.1**	**37000**	**900**	13
BP-3	11/11/2009	2121.31	7.62	2113.69	**6.34**	90900	**10.5**	**41000**	**850**	14
BP-3	4/11/2010	2121.31	5.92	2115.39	**6.46**	95900	**5**	**37000**	**960**	18
BP-3	6/29/2010	2121.31	5.59	2115.72	**6.46**	83400	11.1	**28000**	**1100**	13
SD-1	5/25/2006	2131.93	NM		**6.36**	179,300	**11.7**	**19500**	**1780**	ND
SD-1	9/8/2006	2131.93	13.17	2118.76	**6.4**	119,500	**13.9**	**86300**	**949**	59.3
SD-1	11/8/2006	2131.93	15.00	2116.93	**6.22**	89,300	**11.3**	**60800**	**1090**	150
SD-1	3/14/2007	2131.93	no access							
SD-1	6/13/2007	2131.93	11.44	2120.49	6.88	31,900	**10.1**	**25000**	**1500**	77
SD-1	9/11/2007	2131.93	14.02	2117.91	7.08	16630	**15.2**	**14000**	**1400**	56
SD-1	11/14/2007	2131.93	14.68	2117.25	**6.31**	28700	**10.5**	**17000**	**1300**	53
SD-1	3/12/2008	2131.93	15.52	2116.41	6.99	63000	**8.2**	**22000**	**1200**	93
SD-1	6/3/2008	2131.93	15.16	2116.77	6.86	18410	**8.4**	**12000**	**1700**	42
SD-1	9/16/2008	2131.93	15.86	2116.07	**6.2**	32700	**13.8**	**32000**	**1100**	140
SD-1	11/19/2008	2131.93	16.00	2115.93	**NM**	12870	**8.9**	**31000**	**1200**	120
SD-1	4/21/2009	2131.93	8.94	2122.99	**NM**	11410	**9.1**	**15000**	**980**	39
SD-1	6/30/2009	2131.93	12.02	2119.91	7.62	10950	**13**	**5700**	**1100**	22
SD-1	9/14/2009	2131.93	14.02	2117.91	7.2	7100	**15.2**	**1600**	**900**	11
SD-1	11/11/2009	2131.93	14.79	2117.14	7.24	19860	**12.4**	**5000**	**860**	39
SD-1	4/11/2010	2131.93	9.53	2122.40	7.05	18880	**5.4**	**5200**	**900**	14
SD-1	6/29/2010	2131.93	9.38	2122.55	7.59	5020	17.2	**1400**	**1400**	6.3

TABLE B-1
Historical Groundwater Field Parameters and Anion Analysis Table

		FIELD PARAMETERS						ANIONS		
Well ID	Date	Elevation of Top of PVC Casing	Depth to Water	WTE	pH	Specific Conductance	**Temperature**	**Chloride**	**Sulfate**	Ammonia
EPA PRIMARY DRINKING WATER STANDARDS (MCL)										
EPA SECONDARY DRINKING WATER STANDARDS					**6.5 – 8.5**			250	250	
DUP-1	9/11/2007	MW-5	8.08					**8600**	**2000**	3.3
DUP-1	11/14/2007	MW-5	8.82					**7600**	**1900**	3.0
DUP-1	3/12/2008	BP-3	8.14					**28000**	**1200**	4.3
DUP-1	6/3/2008	MW-5	7.35					**3600**	**1400**	1.4
MW-9 DUP	11/19/2008	MW-9	10.20					2.4	70	0.40
MW-5 DUP	4/21/2009	MW-5	6.34					**2600**	**1800**	1.3
MW-5 DUP	6/30/2009	MW-5						**4000**	**2200**	2.2
Pump Outlet	6/30/2009	N/A	surface		**9.47**	1490	**19.3**	**280**	**850**	<0.10
MW-5 DUP	9/14/2009	MW-5						**3000**	**2100**	1.8
BP-3 DUP	11/11/2009	BP-3						**42000**	**860**	14.0
MW-5 DUP	4/11/2010	MW-5						**2800**	**2400**	1.4
BP-3 DUP	6/29/2010	BP-3						**31000**	**1100**	14.0

TABLE B-2
Historical Groundwater Metals Analysis Table

Well ID	Date	METALS Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
EPA PRIMARY DRINKING WATER ST			0.006	0.01	2.0	0.004	0.005		0.1		1.3		0.015			0.002			0.05			0.002		
EPA SECONDARY DRINKI		0.2									1.0	0.3			0.05					0.10				5
MW-1	9/8/2006	9.9	ND	ND	1.1	ND	ND	9500	ND	ND	ND	0.2	ND	1700	11	0.00023	ND	1200	ND	ND	47000	ND	ND	0.066
MW-1	11/8/2006	ND	ND	ND	1.2	ND	0.14 J	10000 J	ND	ND	ND	ND	1.2 J	1700 J	10	ND	0.33 J	1600	ND	ND	54000 J	2.7 J	ND	ND
MW-1	3/14/2007																							
MW-1	6/13/2007																							
MW-1	9/11/2007	<0.10	<0.020	0.17	0.98	<0.0020	0.074	8300	<0.010	0.012	0.090	0.72	0.26	2000	27	<0.00020	0.20	2200	0.70	<0.010	40000	0.015	<0.010	0.056
MW-1	11/14/2007																							
MW-1	3/12/2008																							
MW-1	6/3/2008																							
MW-1	9/16/2008	0.88	<0.010	<0.010	1.1	<0.010	0.10	7400	<0.050	<0.050	<0.10	<0.50	0.085	1700	25	<0.00020	0.2	1600	<0.10	<0.050	38000	<0.010	<0.050	<0.15
MW-1	11/19/2008																							
MW-1	4/21/2009																							
MW-1	6/30/2009																							
MW-1	9/14/2009	<0.10	<0.010	0.093	0.41	<0.010	<0.0050	4400	<0.010	<0.010	<0.020	<0.10	0.32	850	11	<0.0020	0.12	900	<0.10	<0.010	25000	<0.010	<0.010	<0.030
MW-1	11/11/2009																							
MW-1	4/11/2010																							
MW-1	9/30/2010	<0.5	<0.02	<0.02	0.25	<0.01	0.054	2900	<0.05	<0.1	<0.1	<0.5	<0.25	850	6	<0.0002	<0.1	440	<0.1	<0.05	13000	<0.02	<0.05	<0.15
MW-2	9/8/2006	12	ND	ND	2.0	ND	0.23	10000	ND	ND	ND	ND	ND	1000	14	0.00042	ND	3000	ND	ND	73000	ND	0.26	0.052
MW-2	11/8/2006	ND	ND	ND	2.2	ND	0.21 J	11000 J	ND	ND	ND	ND	0.50 J	1100 J	16	ND	0.38 J	3300	ND	ND	80000 J	2.8 J	ND	0.39 J
MW-2	3/14/2007																							
MW-2	6/13/2007																							
MW-2	9/11/2007	<0.10	<0.020	0.18	1.3	<0.0020	0.091	8000	<0.010	<0.010	<0.020	<0.10	0.28	950	24	<0.00020	0.27	3000	0.47	<0.010	44000	0.016	<0.010	0.046
MW-2	11/14/2007																							
MW-2	3/12/2008																							
MW-2	6/3/2008																							
MW-2	9/16/2008	1.0	<0.010	0.012	1.4	<0.010	0.12	6900	<0.050	<0.050	<0.10	<0.50	0.054	1400	42	<0.00020	0.36	1700	<0.10	<0.050	36000	0.012	<0.050	<0.15
MW-2	11/19/2008																							
MW-2	4/21/2009																							
MW-2	6/30/2009																							
MW-2	9/14/2009	<0.10	<0.010	0.094	0.22	<0.0040	<0.0050	2600	<0.010	<0.010	0.02	<0.10	0.23	430	4.7	<0.0020	0.089	650	<0.10	<0.010	14000	<0.010	<0.010	<0.030
MW-2	11/11/2009																							
MW-2	4/11/2010																							
MW-2	9/30/2010	<0.1	<0.005	0.045	0.15	<0.01	0.0067	1100	<0.01	<0.05	<0.1	<0.1	<0.05	270	2.5	<0.0002	0.038	310	<0.02	<0.01	6400	<0.005	<0.01	<0.03
MW-3	9/8/2006	11	ND	0.062	0.59	0.00069	0.09	7600	ND	0.012	ND	5.4	ND	2100	2.9	0.00046	0.16	240	ND	ND	23000	ND	0.027	0.032
MW-3	11/8/2006	ND	ND	0.30 J	0.37	ND	0.10 J	7600 J	ND	ND	ND	ND	0.30 J	2100 J	4.9	ND	0.27 J	170	ND	ND	19000 J	1.2 J	ND	0.14 J
MW-3	3/14/2007																							
MW-3	6/13/2007																							
MW-3	9/11/2007	<0.10	<0.020	0.14	0.35	<0.0020	0.021	8900	<0.010	0.035	<0.020	<0.10	0.31	2500	23	<0.00020	0.23	300	0.48	<0.010	21000	<0.010	<0.010	0.15
MW-3	11/14/2007																							
MW-3	3/12/2008																							
MW-3	6/3/2008																							
MW-3	9/16/2008	1.1	<0.010	0.03	0.29	<0.020	<0.050	6700	<0.10	<0.10	<0.20	<1.0	<0.050	1800	12	<0.00020	0.21	170	<0.20	<0.10	16000	0.012	<0.10	<0.60
MW-3	11/19/2008																							
MW-3	4/21/2009																							
MW-3	6/30/2009																							
MW-3	9/14/2009	<0.10	<0.010	0.12	0.21	<0.020	<0.010	6900	<0.010	<0.010	<0.020	<0.10	0.49	1900	5.6	<0.0020	0.14	160	<0.20	<0.010	16000	<0.010	<0.010	0.066
MW-3	11/11/2009																							
MW-3	4/11/2010																							
MW-3	9/30/2010	<1	<0.02	<0.02	0.32	<0.02	0.037	3700	<0.1	<0.1	<0.2	<0.1	<0.5	1200	5	<0.0002	0.11	280	<0.1	<0..01	8700	<0.02	<0.1	0.041

TABLE B-2

Historical Groundwater Metals Analysis Table

Well ID	Date	METALS Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
EPA PRIMARY DRINKING WATER ST			0.006	0.01	2.0	0.004	0.005		0.1		1.3		0.015			0.002			0.05			0.002		
EPA SECONDARY DRINKI		0.2									1.0	0.3			0.05					0.10				5
MW-4	9/8/2006																							
MW-4	11/8/2006	ND	ND	ND	0.32	ND	ND	7200 J	ND	ND	ND	ND	0.36 J	2200 J	2.6	ND	ND	14	ND	ND	12000 J	0.97 J	ND	0.12 J
MW-4	3/14/2007																							
MW-4	6/13/2007																							
MW-4	9/11/2007	<0.10	<0.020	0.13	0.34	<0.0020	0.040	5900	<0.010	<0.010	<0.020	<0.10	0.24	2200	3.4	<0.00020	0.15	330	<0.20	<0.010	15000	<0.010	<0.010	0.043
MW-4	11/14/2007																							
MW-4	3/12/2008																							
MW-4	6/3/2008																							
MW-4	9/16/2008	0.85	<0.010	0.17	0.46	<0.010	0.052	7300	<0.050	<0.050	<0.10	<0.50	0.054	2900	4.8	<0.00020	0.18	270	<0.10	<0.050	13000	<0.010	<0.050	<0.30
MW-4	11/20/2008																							
MW-4	4/21/2009																							
MW-4	6/30/2009																							
MW-4	9/14/2009	<0.10	<0.010	0.13	0.17	<0.010	<0.0050	5100	<0.010	<0.010	0.023	<0.10	0.36	1800	1.6	<0.0020	0.1	320	<0.10	<0.010	16000	<0.010	<0.010	0.037
MW-4	11/11/2009																							
MW-4	4/11/2010																							
MW-4	9/30/2010	<1	<0.02	0.04	0.12	<0.01	0.012	2800	<0.01	<0.05	<0.1	<0.1	<0.25	930	0.61	<0.0002	0.053	520	0.022	<0.01	14000	<0.02	0.16	<0.03
MW-5	9/8/2006	1.4	ND	ND	0.11	ND	ND	930	ND	0.028	ND	20	ND	560	13	ND	0.057	33	ND	ND	3300	ND	ND	ND
MW-5	11/8/2006	0.86	ND	ND	0.071	ND	ND	860 J	ND	0.029	ND	2.4	0.023 J	520 J	13	ND	0.052	30	0.034 J	ND	3000 J	ND	ND	0.010 J
MW-5	3/14/2007																							
MW-5	6/13/2007																							
MW-5	9/11/2007	<0.10	<0.020	0.033	0.074	<0.0020	<0.0050	870	<0.010	0.017	<0.020	0.50	<0.0050	510	14	<0.00020	0.035	34	<0.020	<0.010	3800	<0.0050	<0.010	<0.030
MW-5	11/14/2007																							
MW-5	3/12/2008																							
MW-5	6/3/2008																							
MW-5	9/16/2008	0.13	<0.0010	0.013	0.023	<0.0020	<0.0050	160	<0.010	<0.010	<0.020	<0.10	<0.0050	90	2.2	<0.00020	<0.020	12	<0.020	<0.010	1800	<0.0010	<0.010	<0.030
MW-5	11/19/2008																							
MW-5	4/21/2009																							
MW-5	6/30/2009																							
MW-5	9/14/2009	<0.10	<0.0010	0.028	0.046	<0.0020	<0.0050	460	<0.010	<0.010	<0.020	0.11	0.036	270	6.3	<0.0020	0.028	22	0.021	<0.010	2500	<0.0010	<0.010	<0.030
MW-5	11/11/2009																							
MW-5	4/11/2010																							
MW-5	9/30/2010	<0.5	<0.001	0.011	0.049	<0.01	<0.025	400	<0.05	<0.05	<0.1	<0.5	<0..025	230	5.6	<0.0002	<0.1	23	<0.1	<0.05	2500	<0.001	<0.05	<0.15
MW-7	9/8/2006	ND	0.037	ND	0.016	ND	ND	110	ND	0.0087	ND	ND	ND	43	0.71	ND	ND	6.1	ND	ND	550	ND	ND	ND
MW-7	11/8/2006	ND	ND	ND	0.019	ND	0.00095 J	110 J	ND	0.0037 J	ND	ND	ND	46	0.73	ND	0.0086 J	5.8	ND	ND	560 J	ND	ND	0.013 J
MW-7	3/14/2007																							
MW-7	6/13/2007																							
MW-7	9/11/2007	0.11	<0.020	<0.0050	0.025	<0.0020	<0.0050	110	<0.010	<0.010	<0.020	<0.10	<0.0050	42	0.51	<0.00020	<0.020	4.7	<0.020	<0.010	530	<0.0050	<0.010	<0.030
MW-7	11/14/2007																							
MW-7	3/12/2008																							
MW-7	6/3/2008																							
MW-7	9/16/2008	<0.10	<0.0010	0.0021	0.023	<0.0020	<0.0050	120	<0.010	<0.010	<0.020	<0.10	<0.0050	42	0.28	<0.00020	<0.020	5.6	<0.020	<0.010	580	<0.0010	<0.010	<0.030
MW-7	11/19/2008																							
MW-7	4/21/2009																							
MW-7	6/30/2009																							
MW-7	9/14/2009	<0.10	<0.0010	0.0064	0.014	<0.0020	<0.0050	120	<0.010	<0.010	<0.020	<0.10	0.012	45	0.098	<0.0020	<0.020	4.9	0.021	<0.010	590	<0.0010	<0.010	<0.030
MW-7	11/11/2009																							
MW-7	4/11/2010																							
MW-7	9/30/2010	<0.5	<0.005	0.058	0.17	<0.01	0.0075	1300	<0.01	<0.05	<0.1	<0.1	<0.05	300	2.8	<0.0002	0.045	330	<0.02	<0.01	8300	<0.005	<0.01	<0.03

TABLE B-2
Historical Groundwater Metals Analysis Table

Well ID	Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
		METALS																						
EPA PRIMARY DRINKING WATER ST			0.006	0.01	2.0	0.004	0.005		0.1		1.3		0.015			0.002			0.05			0.002		
EPA SECONDARY DRINKI		0.2									1.0	0.3			0.05					0.10				5
MW-8	9/8/2006	ND	**0.027**	ND	0.0082	ND	ND	47	ND	0.012	ND	0.086	ND	33	**0.51**	ND	ND	7.6	ND	ND	730	ND	ND	ND
MW-8	11/8/2006	ND	**0.014 J**	ND	0.027	ND	ND	90 J	ND	0.0095	ND	ND	ND	78 J	**0.99**	ND	0.015 J	11	ND	ND	1000 J	ND	ND	ND
MW-8	3/14/2007																							
MW-8	6/13/2007																							
MW-8	9/11/2007	<0.10	**<0.020**	<0.0050	0.0092	<0.0020	<0.0050	58	<0.010	<0.010	<0.020	<0.10	<0.0050	44	**0.46**	<0.00020	<0.020	7.7	<0.020	<0.010	790	**<0.0050**	<0.010	<0.030
MW-8	11/14/2007																							
MW-8	3/12/2008																							
MW-8	6/3/2008																							
MW-8	9/16/2008	<0.10	<0.0010	0.006	0.01	<0.0020	<0.0050	85	<0.010	<0.010	<0.020	<0.10	<0.0050	64	**0.54**	<0.00020	<0.020	9.7	<0.020	<0.010	940	<0.0010	<0.010	<0.030
MW-8	11/19/2008																							
MW-8	4/21/2009																							
MW-8	6/30/2009																							
MW-8	9/14/2009	<0.10	<0.0010	0.0068	0.011	<0.0020	<0.0050	85	<0.010	<0.010	<0.020	<0.10	0.0072	64	**0.37**	<0.0020	<0.020	9.2	0.026	<0.010	1000	<0.0010	<0.010	<0.030
MW-8	11/11/2009																							
MW-8	4/11/2010																							
MW-8	9/30/2010	<0.1	<0.001	0.0028	0.013	<0.002	<0.005	80	<0.01	<0.01	<0.02	<0.1	<0.005	63	**0.11**	<0.0002	<0.02	7.8	<0.02	<0.01	950	<0.001	<0.01	<0.03
MW-9	9/8/2006	ND	ND	ND	0.015	ND	ND	62	ND	0.0093	ND	ND	ND	43	**0.3**	ND	ND	8.2	ND	ND	620	ND	ND	ND
MW-9	11/8/2006	ND	**0.011 J**	ND	0.01	ND	ND	84 J	ND	0.0014 J	ND	ND	0.013 J	72 J	**0.39**	ND	0.017 J	9.5	0.030 J	ND	820 J	ND	ND	0.011 J
MW-9	3/14/2007																							
MW-9	6/13/2007																							
MW-9	9/11/2007	<0.10	**<0.020**	<0.0050	0.013	<0.0020	<0.0050	86	<0.010	<0.010	<0.020	<0.10	<0.0050	64	**0.28**	<0.00020	<0.020	8.5	<0.020	<0.010	770	**<0.0050**	<0.010	<0.030
MW-9	11/14/2007																							
MW-9	3/12/2008																							
MW-9	6/3/2008																							
MW-9	9/16/2008	<0.10	<0.0010	0.0027	0.0093	<0.0020	<0.0050	77	<0.010	<0.010	<0.020	<0.10	<0.0050	59	**0.06**	<0.00020	<0.020	8.1	<0.020	<0.010	780	<0.0010	<0.010	<0.030
MW-9	11/19/2008																							
MW-9	4/21/2009																							
MW-9	6/30/2009																							
MW-9	9/14/2009	<0.10	<0.0010	0.0038	<0.0050	<0.0020	<0.0050	82	<0.010	<0.010	<0.020	<0.10	0.0087	62	**0.14**	<0.0020	<0.020	8.2	<0.020	<0.010	820	<0.0010	<0.010	<0.030
MW-9	11/11/2009																							
MW-9	4/11/2010																							
MW-9	9/30/2010	0.11	<0.001	0.0034	0.011	<0.002	<0.005	78	<0.01	<0.01	<0.02	<0.1	<0.005	60	**0.1**	<0.0002	<0.02	9.1	<0.02	<0.01	800	<0.001	<0.01	<0.03
MW-10	9/8/2006	**0.83**	ND	ND	0.16	ND	ND	670	ND	ND	ND	**5.4**	ND	270	**2.1**	ND	ND	40	ND	ND	2100	ND	ND	ND
MW-10	11/8/2006	**2.9**	**0.013 J**	ND	0.5	0.00021 J	0.0028 J	2000 J	ND	0.0087	0.0038 J	**15**	0.014 J	730 J	**5.4**	ND	0.034	160	0.027 J	ND	7600 J	ND	ND	ND
MW-10	3/14/2007																							
MW-10	6/13/2007																							
MW-10	9/11/2007	<0.10	**<0.020**	**0.027**	0.14	<0.0020	<0.0050	740	<0.010	<0.010	<0.020	<0.10	<0.0050	270	**2.2**	<0.00020	<0.020	71	<0.020	<0.010	3200	**<0.0050**	<0.010	<0.030
MW-10	11/14/2007																							
MW-10	3/12/2008																							
MW-10	6/3/2008																							
MW-10	9/16/2008	0.10	<0.0020	**0.036**	0.14	<0.0020	<0.0050	670	<0.010	<0.010	<0.020	<0.10	<0.0050	240	**2.0**	<0.00020	<0.020	75	<0.020	<0.010	4400	<0.0020	<0.010	<0.030
MW-10	11/19/2008																							
MW-10	4/21/2009																							
MW-10	6/30/2009																							
MW-10	9/14/2009	<0.10	<0.0010	**0.016**	0.16	<0.0020	<0.0050	840	<0.010	<0.010	<0.020	6.1	0.056	320	**2.5**	<0.0020	<0.020	64	<0.020	<0.010	2700	<0.0010	<0.010	<0.030
MW-10	11/11/2009																							
MW-10	4/11/2010																							
MW-10	9/30/2010	<0.1	<0.001	**0.014**	0.15	<0.002	<0.005	840	<0.01	<0.05	<0.1	<0.1	<0.05	350	**2.7**	<0.0002	<0.02	79	<0.02	<0.01	3400	<0.001	<0.01	<0.03

TABLE B-2
Historical Groundwater Metals Analysis Table

Well ID	Date	METALS Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
EPA PRIMARY DRINKING WATER S			0.006	0.01	2.0	0.004	0.005		0.1		1.3		0.015			0.002			0.05			0.002		
EPA SECONDARY DRINKI		0.2									1.0	0.3			0.05					0.10				5
MW-11	9/8/2006	**0.24**	**0.029**	ND	0.039	ND	ND	300	ND	0.009	ND	ND	ND	130	**0.67**	ND	ND	19	ND	ND	1300	ND	ND	ND
MW-11	11/8/2006	ND	ND	**0.014 J**	0.022	ND	ND	290 J	ND	0.013	0.0047 J	ND	0.011 J	150 J	**0.78**	ND	0.021 J	16	ND	0.0038 J	1300 J	ND	ND	0.010 J
MW-11	3/14/2007																							
MW-11	6/13/2007																							
MW-11	9/11/2007	<0.10	**<0.020**	<0.0050	0.016	<0.0020	<0.0050	290	<0.010	<0.010	<0.020	<0.10	<0.0050	130	**0.75**	<0.00020	<0.020	15	<0.020	<0.010	1400	**<0.0050**	<0.010	<0.030
MW-11	11/14/2007																							
MW-11	3/12/2008																							
MW-11	6/3/2008																							
MW-11	9/16/2008	<0.10	<0.0020	0.0054	0.015	<0.0020	<0.0050	270	<0.010	<0.010	<0.020	<0.10	<0.0050	120	**0.94**	<0.00020	<0.020	15	<0.020	<0.010	1700	<0.0020	<0.010	<0.30
MW-11	11/19/2008																							
MW-11	4/21/2009																							
MW-11	6/30/2009																							
MW-11	9/14/2009	<0.10	<0.0010	0.0022	0.011	<0.0020	<0.0050	280	<0.010	<0.010	<0.020	<0.10	0.024	130	**0.81**	<0.0020	<0.020	15	<0.020	<0.010	1300	<0.0010	<0.010	<0.030
MW-11	11/11/2009																							
MW-11	4/11/2010																							
MW-11	9/30/2010	<0.1	<0.001	0.0019	0.012	<0.002	<0.005	290	<0.01	<0.01	<0.02	<0.1	<0.025	140	**0.7**	<0.0002	<0.02	14	<0.02	<0.01	1400	<0.001	<0.05	<0.03
BP-3	5/25/2006	**5.6 J**	**ND**	**ND**	0.14	0.0027	**ND**	3000	ND	ND	0.0055	ND	**ND**	1500	**0.81**	ND	0.058	29	**ND**	ND	4500	**ND**	ND	ND
BP-3	9/8/2006	**4.9**	**0.028**	ND	0.17	ND	ND	2700	ND	0.008	ND	ND	ND	1300	**0.83**	ND	0.064	56	ND	ND	8300	ND	ND	ND
BP-3	11/8/2006	**4.9**	**0.022 J**	**0.031 J**	0.15	0.00020 J	0.0021 J	2900 J	ND	0.0096	ND	0.059 J	ND	1500 J	**0.69**	ND	0.07	50	**0.12**	ND	7300 J	ND	ND	ND
BP-3	3/14/2007																							
BP-3	6/13/2007																							
BP-3	9/11/2007	<0.10	**<0.020**	**0.082**	0.20	<0.0020	**0.0076**	3800	<0.010	<0.010	<0.020	<0.10	**<0.025**	1800	**0.57**	<0.00020	0.033	55	**<0.10**	<0.010	8000	**<0.0050**	<0.010	<0.030
BP-3	11/14/2007																							
BP-3	3/12/2008																							
BP-3	6/3/2008																							
BP-3	9/16/2008	**0.21**	<0.010	**0.10**	0.31	<0.0020	**0.014**	5400	<0.010	<0.010	<0.020	<0.10	**<0.025**	2700	**0.81**	0.00048	0.029	90	<0.020	<0.010	11000	**<0.010**	<0.010	<0.30
BP-3	11/19/2008																							
BP-3	4/21/2009																							
BP-3	6/30/2009																							
BP-3	9/14/2009	<0.10	**<0.010**	**0.057**	0.30	**<0.010**	<0.0050	5300	<0.010	<0.010	<0.020	<0.10	**0.37**	1800	**0.38**	<0.0020	0.064	120	**<0.10**	<0.010	13000	**<0.010**	<0.010	<0.030
BP-3	11/11/2009																							
BP-3	4/11/2010																							
BP-3	9/30/2010	<0.5	**<0.02**	**0.020**	0.34	**<0.01**	<0.025	4800	<0.05	<0.1	<0.1	<0.5	**<0.25**	1900	**0.4**	<0.0002	<0.1	130	**<0.1**	<0.05	12000	**<0.02**	<0.05	<0.15
SD-1	5/25/2006	**13 J**	ND	ND	1.7	ND	ND	8300	ND	0.12	ND	**1.9**	ND	1300	**36**	ND	0.24	1700	ND	ND	46000	ND	ND	ND
SD-1	9/8/2006	**7**	ND	ND	0.8	ND	ND	3700	ND	0.04	ND	**5.6**	ND	990	**18**	0.00016	0.13	970	ND	ND	31000	ND	ND	ND
SD-1	11/8/2006	**6.6**	ND	**0.015 J**	0.78	0.00021 J	0.0014 J	4900 J	ND	0.052	ND	**6.9**	ND	920 J	**31**	ND	0.15	920 J	0.020 J	ND	28000 J	ND	ND	ND
SD-1	3/14/2007																							
SD-1	6/13/2007																							
SD-1	9/11/2007	<0.10	**<0.020**	**0.12**	0.21	<0.0020	<0.0050	1400	<0.010	0.018	<0.020	<0.10	**<0.025**	340	**14**	<0.00020	0.080	320	**<0.10**	<0.010	8200	**<0.0050**	<0.010	<0.030
SD-1	11/14/2007																							
SD-1	3/12/2008																							
SD-1	6/3/2008																							
SD-1	9/16/2008	0.19	<0.010	**0.16**	0.31	<0.0020	**0.012**	3000	<0.010	0.043	<0.020	<0.10	**<0.050**	640	**28**	<0.00020	0.13	620	<0.020	<0.010	16000	**<0.010**	<0.010	<0.30
SD-1	11/19/2008																							
SD-1	4/21/2009																							
SD-1	6/30/2009																							
SD-1	9/14/2009	<0.10	0.0010	**0.027**	0.076	<0.0020	<0.0050	320	<0.010	<0.010	<0.020	<0.10	**0.029**	93	**2.4**	<0.0020	0.036	91	<0.020	<0.010	2400	<0.0010	<0.010	<0.030
SD-1	11/11/2009																							
SD-1	4/11/2010																							
SD-1	9/30/2010	<0.1	<0.001	**0.0042**	0.058	<0.002	<0.005	240	<0.01	<0.01	<0.02	<0.1	**<0.025**	140	**2.8**	<0.0002	0.039	59	<0.02	<0.01	990	<0.001	<0.01	<0.03
DUP-1	9/11/2007	<0.10	**<0.020**	**0.044 J**	0.075	<0.0020	<0.0050	840	<0.010	0.018	<0.020	<0.10	<0.0050	490	**14**	<0.00020	0.035	35	<0.020	<0.010	3800	**<0.0050**	<0.010	<0.030
DUP-1	11/14/2007																							
DUP-1	3/12/2008																							

TABLE B-2

Historical Groundwater Metals Analysis Table

Well ID	Date	METALS Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
EPA PRIMARY DRINKING WATER ST			0.006	0.01	2.0	0.004	0.005		0.1		1.3		0.015			0.002			0.05			0.002		
EPA SECONDARY DRINKI		0.2									1.0	0.3			0.05					0.10				5
DUP-1	6/3/2008																							
MW-9 DUP	11/19/2008																							
MW-5 DUP	4/21/2009																							
MW-5 DUP	6/30/2009																							
MW-5 DUP	9/14/2009	<0.10	<0.0010	**0.032**	0.049	<0.0020	<0.0050	480	<0.010	<0.010	<0.020	0.41	0.037	280	**6.7**	<0.0020	0.022	24	<0.020	<0.010	2900	<0.0010	<0.010	<0.030
BP-3 DUP	11/11/2009																							
MW-5 DUP	4/11/2010																							
Pump Outlet	6/30/2009	**0.84**	**<0.0010**	0.0028	0.0032	<0.0020	<0.0050	31	<0.010	<0.010	<0.020	**0.84**	<0.0050	32	**0.18**	<0.00020	<0.020	7.4	<0.020	<0.010	830	<0.0010	<0.010	<0.030
MW-5 DUP	9/30/2010	<0.5	<0.001	0.009	0.046	<0.01	<0.025	380	<0.05	<0.05	<0.1	<0.5	<0.25	220	5.2	<0.0002	<0.1	22	<0.1	<0.05	2400	<0.001	<0.05	<0.15

Chart 1
EP-01 Chloride and Flow

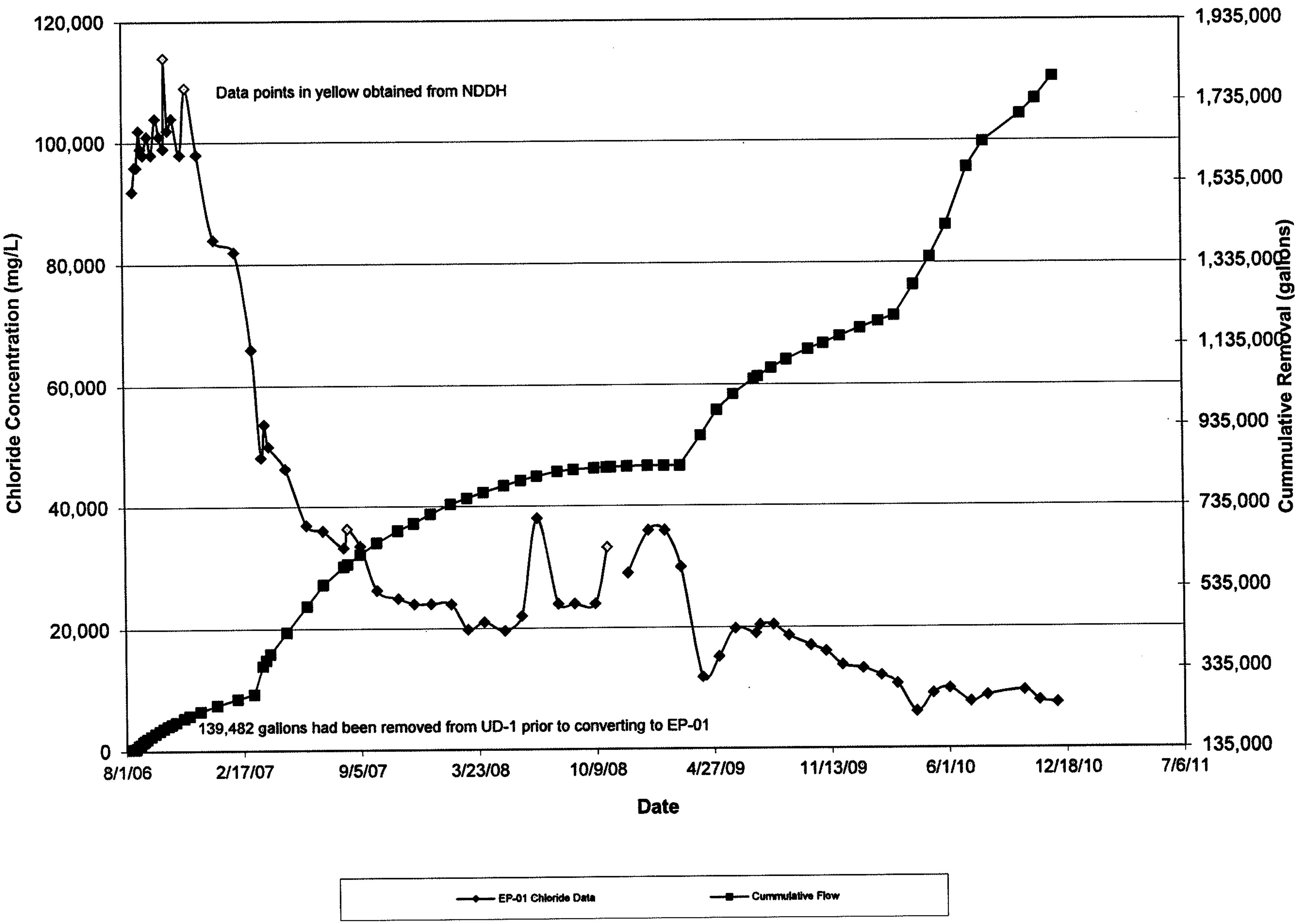


Chart 2
EP-02 Chloride and Flow

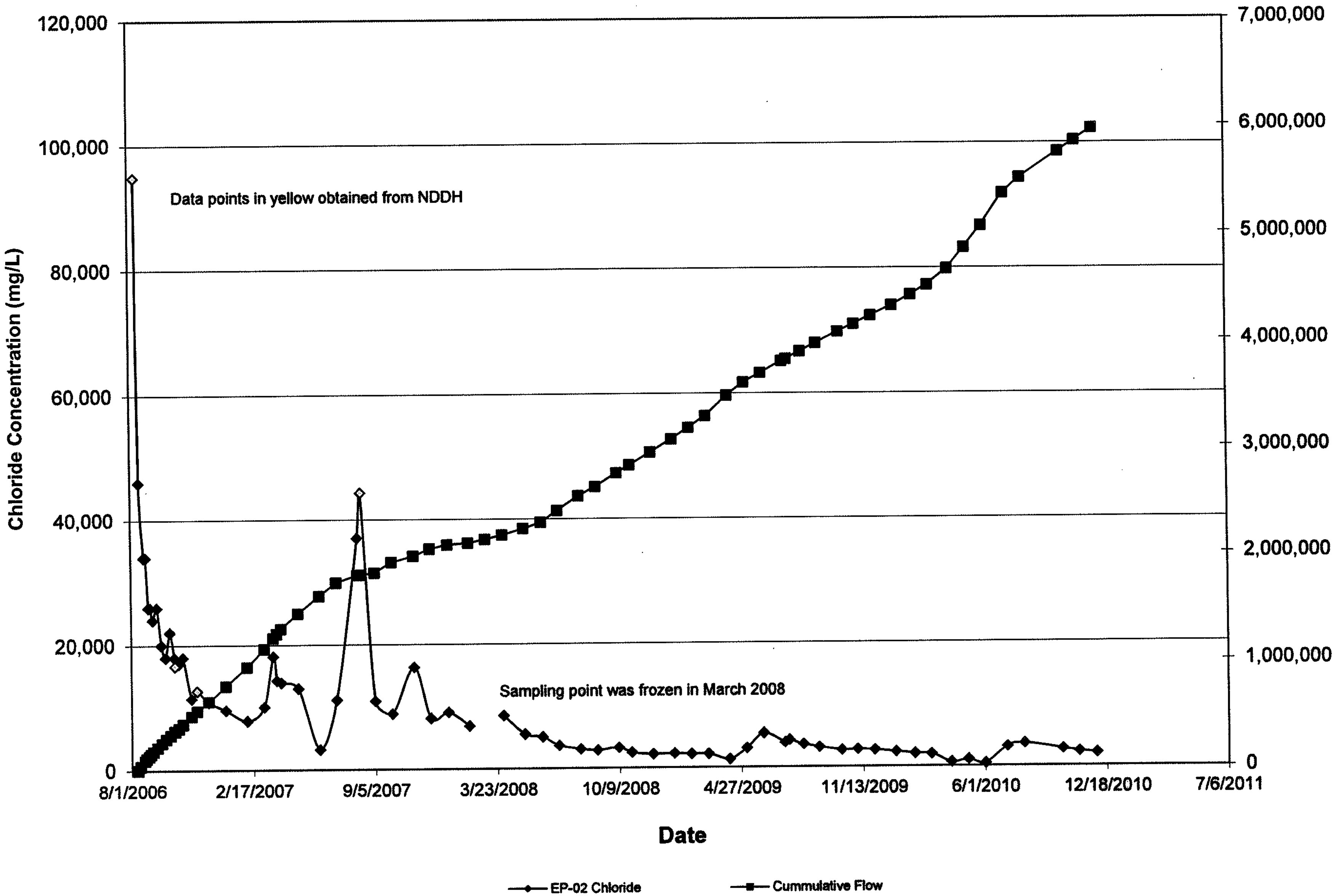


Chart 3
EP-04 Chloride and Flow

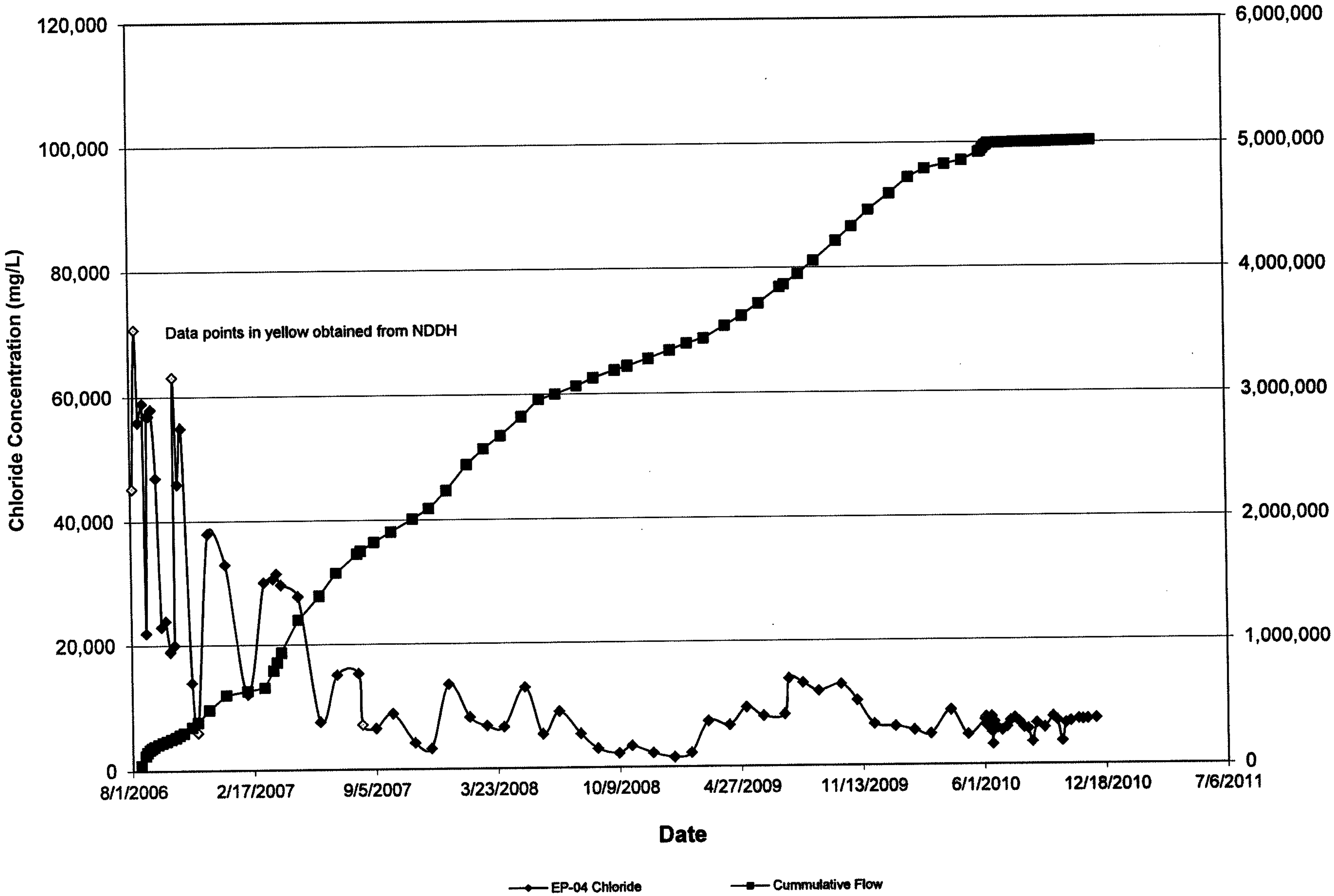


Chart 4
EP-05 Chloride and Flow

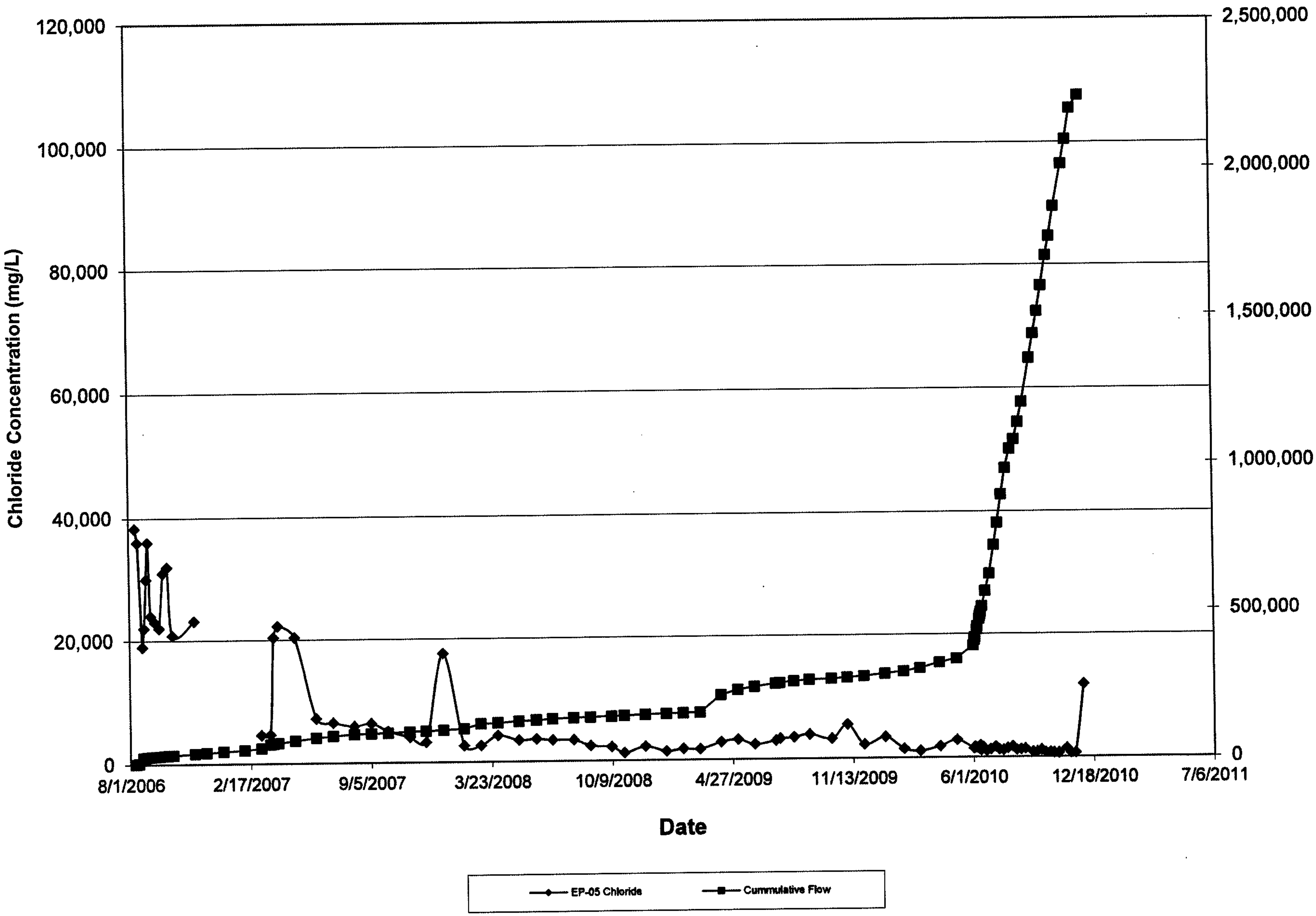
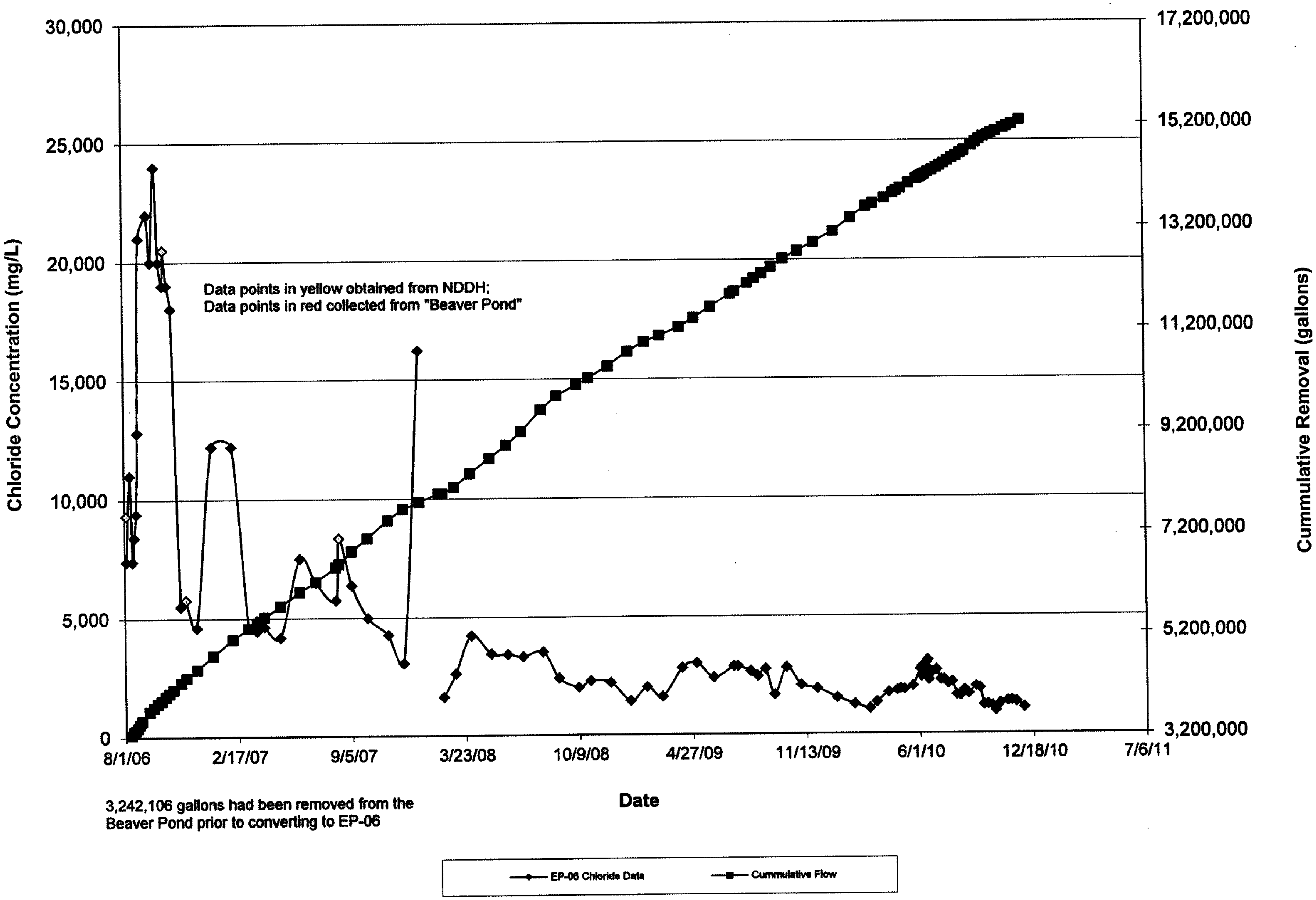


Chart 5
EP-06 Chloride and Flow



3,242,106 gallons had been removed from the Beaver Pond prior to converting to EP-06

Chart 6
Well Chloride Comparison
(EP-01, EP-02, EP-04, EP-05, EP-06)